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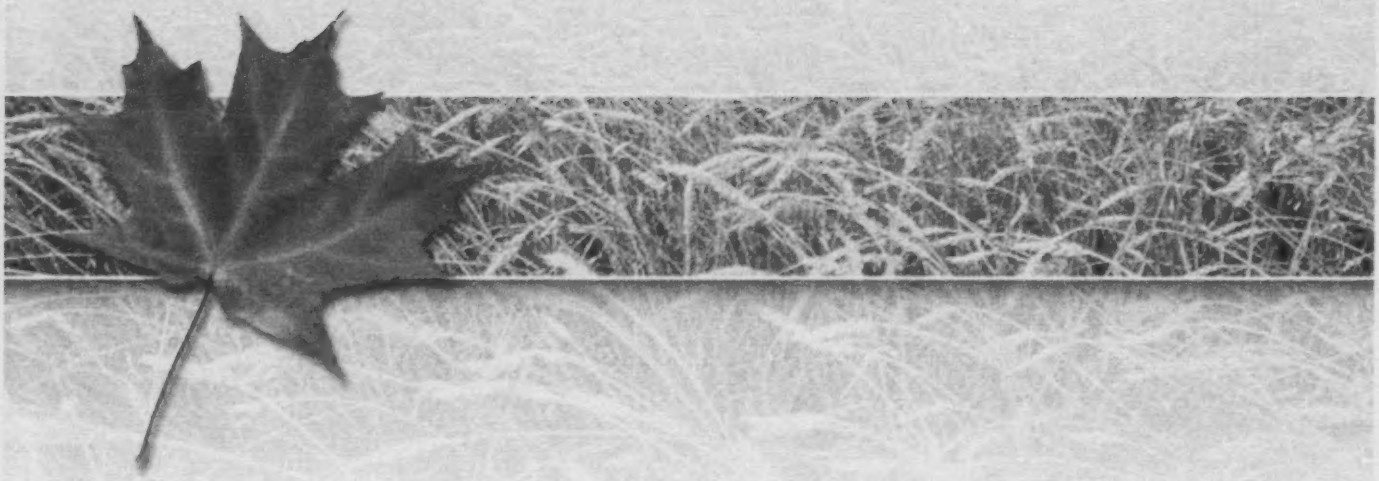

2015

An Overview of the Canadian Agriculture and Agri-Food System

An Overview of the Canadian Agriculture and Agri-Food System 2015

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ABSTRACT

This 2015 report provides an economic overview of the Canadian agriculture and agri-food system using the most recent available data. It is meant to be a multi-purpose reference document that presents:

- the agriculture and agri-food system in the context of the Canadian economy and international markets; and
- a snapshot of the composition and performance of the agriculture and agri-food system as it evolves in response to challenges, opportunities and market developments.

The report begins with a special section on Food Loss and Waste (FLW) at all stages of the agri-food system. It looks at the agriculture and agri-food system's relevance to the Canadian economy, as measured by its share of the Canadian gross domestic product (GDP) and number of jobs in Canada. It then reviews the sector's performance internationally, in terms of its share of agriculture and agri-food exports and imports to total world exports and imports. It also reviews the degree and extent of innovation in the agriculture and agri-food sector, which is key to the ability of the sector to address challenges and take advantage of opportunities in the changing domestic and global market. Next, it presents a snapshot of each segment of the agriculture and agri-food system: primary agriculture; food processing; consumer and food distribution, and it ends with an overview of government support to agriculture.

The report describes the Canadian agriculture and agri-food system as a modern, complex, integrated, and competitive supply chain of importance to the Canadian economy. It is a dynamic and resilient system that adapts constantly to changing consumer demands, technological advances and globalization.

HIGHLIGHTS

SPECIAL SECTION – FOOD LOSS AND WASTE IN THE AGRICULTURE AND AGRI-FOOD SYSTEM

- About one-third of the global food supply is lost or wasted every year. Food is lost or wasted at all stages of the agri-food system and for many reasons ranging from pest and climate issues at the farm level to infrastructure challenges in the distribution stage to consumer decisions at the household level.
- Analysis of food loss and waste in Canada, the U.S., and other developed countries shows that most of the food loss and waste occurs in households and in the food retail and service sectors.
- In Canada, 6 billion kilograms of food was lost or wasted at the household and retail levels, representing 29.4% of the food supply in 2010, with household food loss and waste accounting for 20.3% of this total and retail accounting for the other 9.1%.

IMPORTANCE OF THE SYSTEM TO THE CANADIAN ECONOMY

- Canadian agriculture and agri-food system (AAFS) is a complex and integrated supply chain that includes input and service suppliers, primary producers, food and beverage processors, food retailers and wholesalers, and foodservice providers. The activities along this supply chain generate significant economic benefits at both the national and provincial levels.
- In 2013, the AAFS generated $106.9 billion, accounting for 6.7% of Canada's GDP. Of this, the food retail and wholesale industry accounted for the largest share (1.8%), followed by the food, beverage and tobacco (FBT) processing industry (1.7%). The AAFS's GDP has increased annually since 2007, the exception being during the economic recession of 2009.
- Employment in most industries in the AAFS continued on an upward trend. In 2013, the AAFS provided one in eight jobs in Canada, employing over 2.2 million people. The foodservice industry was the largest employer in the AAFS, accounting for 5.3% of all Canadian jobs.

GLOBAL CONTEXT

- The performance of the sub-sectors within the agriculture and agri-food system depends on their ability to compete in both domestic and international markets over the long-term.
- Canada was the world's fifth-largest exporter of agriculture and agri-food products after the E.U., the U.S., Brazil, and China in 2013. Canadian export sales grew by 5.5% in 2013 to $46.0 billion, maintaining its 3.5% share of the total value of world agriculture and agri-food exports.
- It is estimated that approximately half of the value of primary agriculture production in Canada is exported, as either primary commodities or processed food and beverage products.
- The U.S. remains Canada's most important agriculture and agri-food export destination accounting for 50.8% of total Canadian exports. China accounted for 11.2% of Canadian agriculture and agri-food exports and Japan, E.U., and Mexico accounted for 17.0% combined.
- Exports to the U.S. increased by 10.8% in 2013 to $23.4 billion, while exports to non-U.S. markets grew by 6.0% to $22.7 billion. Exports to China, which grew by 84.0% in 2012, continued to climb, by 3.5%, in 2013.
- With import sales of $34.3 billion in 2013—an increase of 6.0% over the previous year—Canada remained the world's sixth-largest importer, accounting for 2.9% of the total value of world agriculture and agri-food imports. The U.S. accounted for 61.4% of the value of all Canadian agriculture and agri-food imports.

INNOVATION

- Public investments in research and development (R&D) in the agriculture and agri-food sector represent a critical source of innovation and productivity growth. These expenditures, of which the majority are incurred by the federal government, are estimated to rise by 5.3% to $643 million in 2013-2014.
- Canada's public research and development (R&D) spending in the agriculture and agri-food sector, as a share of gross farm receipts (GFR), has decreased over the past five years. However it continues to surpass that of the U.S. and Australia.
- Real private sector spending on primary agriculture amounted to $74.2 million in 2013, a decrease from a peak of $102 million in 2008.
- Real private sector R&D expenditures in the food processing sector were estimated to have reached $130.3 million in 2013, representing a gradual decline from its peak of $179.4 million in 2008.
- In general, the proportion of food processing establishments that report product or process innovation is less than the average for manufacturing establishments as a whole. They also generally invested less in the development of new products and processes.
- New and improved goods and processing methods continue to be the most common innovation introduced by food manufacturers in 2009 and 2012.

COMPONENTS OF THE AGRICULTURE AND AGRI-FOOD SYSTEM

- In response to challenges, opportunities, and changing market conditions, the agriculture and agri-food system continues to transform and restructure itself.

Primary Agriculture

- A record harvest and strong prices in the first half of 2013, contributed to the growth in farm receipts. Cattle receipts have increased for four consecutive years due to strong cattle prices. Strong hog prices contributed to a 5.8% increase in hog receipts in 2013.
- Overall, market receipts increased in value by 155.4% between 2003 and 2013. Market receipts from grains and oilseeds more than tripled during that time period. This accounted for the largest share (40.0%) of the total value of all farm market receipts in 2013. Share of farm receipts from red meats, which was 29.0% in 2003, decreased to 21.0% in 2013.
- Farm level performance, as measured by net cash income and net value added continued to remain strong overall. Net cash income among Canadian farms in 2013 was $12.9 billion - 27.9% above the 2008-2012 average. The net value added in agriculture was $16.2 billion in 2012—30.0% higher than the 2007-2011 average.
- Agriculture producers continue to see rising operating costs, with costs increasing by over 40% over the 2003-2013 period. The categories of operating expenses that mostly contributed to the increase in overall expenses over this period were commercial seed (107%), fertilizer and lime (90%), machinery fuel (80%), and custom work (74%).
- In regards to agriculture and the environment, agriculture is responsible for about 8.4% of Canada's greenhouse gas (GHG) emissions. Over the last 10-15 years, changes in Canada's agricultural GHG emissions profile show a relatively stable trend when considering all sources of emissions. Emissions intensity, measured by the amount of GHGs emitted per unit of GDP, however is expected to decrease by 30.6% by 2020.

Food and Beverage Processing

- The food and beverage processing industry is the largest of all manufacturing industries in Canada, accounting for the largest share (16.0%) of the total manufacturing sector's GDP in 2013. It also accounted for the largest share (16.7%) of jobs in the manufacturing sector.
- The food and beverage processing industry produces goods using both primary and processed products as inputs, about 38% of primary agricultural products produced in canada is used as raw material inputs by the food processing industry.
- The food and beverage processing industry continues to grow, and the value of its shipments more than doubled between 1992 and 2013 to $98.8 billion. More than half of the total value of food processing shipments is accounted for by the meat, dairy, grains and oil seed industries.

Consumers

- Canadians spent $189.1 billion on food, beverages and tobacco products in 2013. This represented the second-largest household expenditure category, after shelter.
- Real spending on food and non-alcoholic beverages increased by 2.1% in 2013 partly due to a slight increase in retail food price inflation in Canada.
- The share of household expenditures on food has decreased since 1997 in Canada. In 2012 food accounted for 10.3% and 12.8% of all household expenditures in Canada and the U.S. respectively.

GOVERNMENT EXPENDITURES IN SUPPORT OF THE SECTOR

- Expressed in dollar terms, government expenditures (federal and provincial) in support of the AAFS were estimated to be $6.2 billion in 2013-2014. As a share of the agriculture GDP, government expenditures were estimated to be 31.2% in 2013-2014. It was 34.6% in fiscal year 2012-2013.
- Research and inspection expenditures and program payments make up the largest portion of government expenditures in support of the agriculture and agri-food sector. Program payments have continued to decrease since the 2003-2004 fiscal year, while research and inspection expenditures have increased.

SECTION A

Special Feature

SECTION A1

Food Loss and Waste in the Agriculture and Agri-Food System

Introduction:

Food is lost or wasted at all stages of the agri-food system and for many reasons. When food products go unsold or uneaten, the associated loss and waste leads to reduced revenues for businesses and higher food costs for consumers. It also reduces the food available for consumption, an important element of food security.

The United Nation's Food and Agriculture Organization (FAO) estimates that one-third of the global food supply is lost or wasted each year. Analysis of the extent of food loss and waste in Canada, the U.S., and other developed countries shows that most of the food loss and waste occurs in households and in the food retail and service sectors.

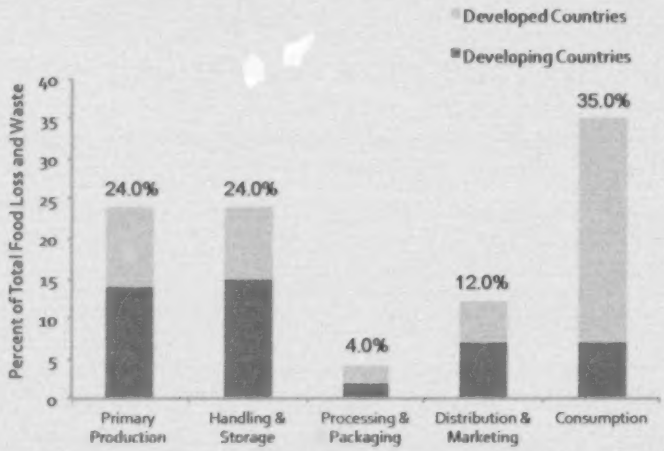
Food loss and waste is a growing concern around the world

A significant amount of food is lost or wasted along the supply chain.

The FAO estimates that one third of global food production is lost or wasted every year. In 2009, 1.6 billion tonnes of food, which is equivalent to 1.5 quadrillion calories of food, was lost or wasted globally; enough to feed over 1 billion people every day for a year.

Almost half of food loss and waste (FLW) occurs at the primary production, and handling and storage stages of the supply chain, most of which is accounted for by developing countries. The consumption stage of the supply chain accounts for 35.0% of FLW, most of which occurs in developed countries.

Chart A.1
Distribution of Total Food Loss and Waste by Stage of the Supply Chain, 2009



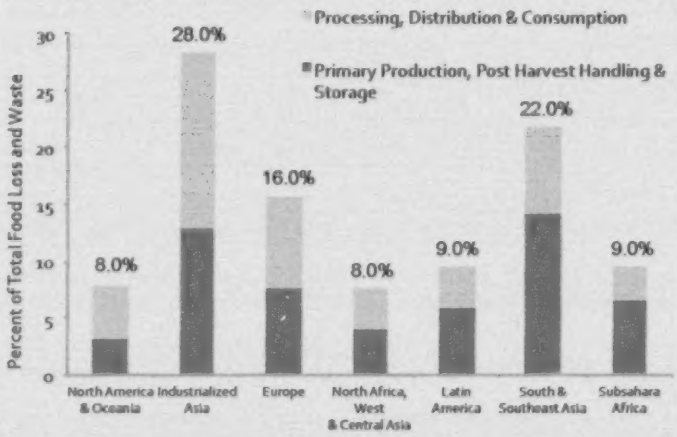
Source: Adapted from World Resources Institute, 2013. Percentage calculations are based on the caloric equivalent of global food losses and waste.

Food loss and waste varies significantly among major global regions

North America and Oceania accounted for 8.0% of total global food loss and waste in 2009. When Europe and Industrialized Asia are included, the developed world accounted for over half of FLW in 2009. The downstream processing, distribution and consumption stages of the food supply chain accounted for almost 30.0% of FLW generated in developed countries.

Almost one quarter of total FLW (22.0%) in 2009 occurred in South and Southeast Asia, mostly at the earlier stages of the food supply chain. According to World Resources Institute, FLW is much higher in urban areas regardless of whether they are in the developed or the developing world.

Chart A.2
Distribution of Total Food Loss and Waste by Major Geographic Areas, 2009



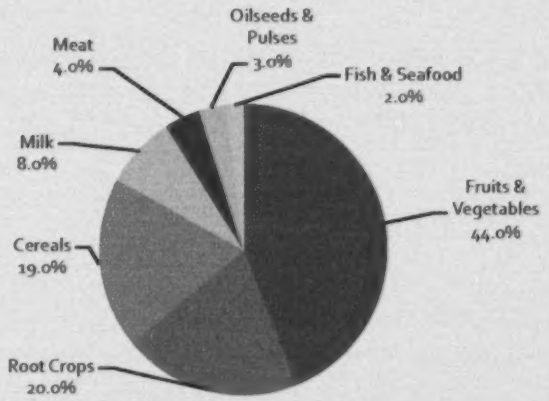
Source: Adapted from FAO, 2013, Food Wastage Footprint: Impacts on Natural Resources, *Technical Report* Percentage calculations based on the *tonnage* of global food losses and waste.

The scale of global food loss and waste varies by commodity

Fruits and vegetables account for the largest share of global food loss and waste, followed by root crops and cereals.

In 2009, fruit and vegetables accounted for 44.0% of global food loss and waste, with root crops and cereals accounting for 20.0% and 19.0% respectively. This reflects the highly perishable nature of some commodities. Animal products tend to account for a smaller share of the quantity of global food loss and waste but account for a greater share of the total value of food loss and waste due to their relatively higher unit value.

Chart A.3
Share of Total Global Food Loss and Waste by Commodity, 2009



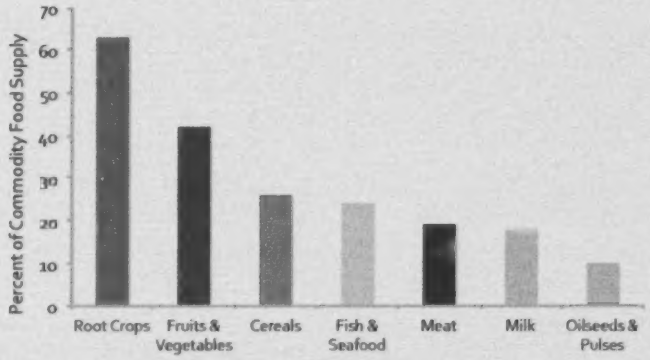
Source: Adapted from World Resources Institute, 2013.
Percentage calculations based on tonnage of global food losses and waste.

The proportion of the available food supply that is lost or wasted also varies according to the food supply.

In 2009, 62.0% of the total supply of root crops and 42.0% of fruits and vegetables were lost and wasted respectively.

It is estimated that food loss and waste for cereals, fish and seafood products amounted to approximately one quarter of total supply in 2009.

Chart A.4
Proportion of Global Commodity Food Supplies Lost or Wasted, 2009



Source: Adapted from World Resources Institute, 2013. Percentage calculations based on the caloric equivalent of food supply in the FAO food balance sheets, by commodity group.

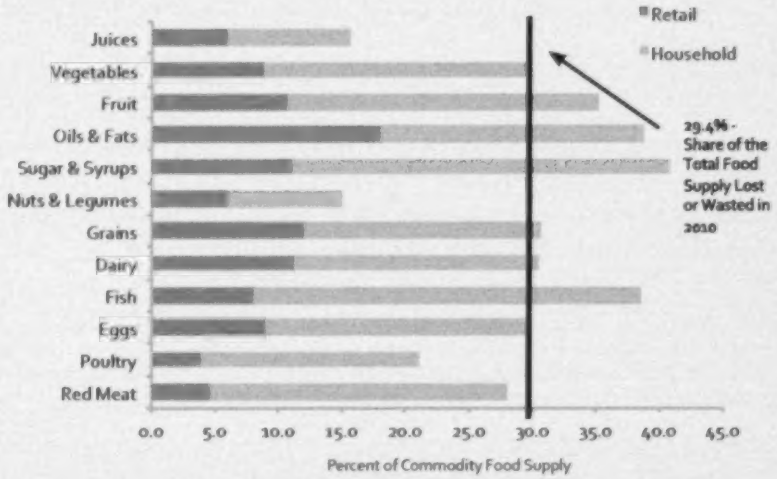
In both Canada and the U.S., about one third of food available for consumption was lost or wasted in households and at the retail level in 2010

In Canada, 6 billion kilograms of food was lost or wasted at the household and retail levels, or 29.4% of the food supply.

Household food loss and waste accounted for 20.3% of the total food supply with retail accounting for the other 9.1%.

By commodity, food loss and waste as a proportion of the available supply was highest for added sugars and syrups at 40.7% and fish at 38.6% respectively, with the household level accounting for the greatest share.

Chart A.5
Retail and Household Food Loss and Waste as a Proportion of the Commodity Food Supply, Canada, 2010



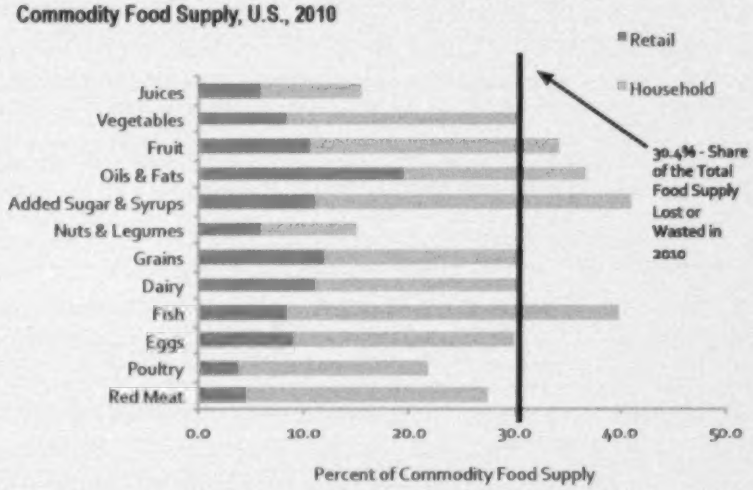
Source: AAFC calculations using Statistics Canada and USDA data. These calculations are based on the share of retail and household waste relative to the total supply of each commodity.

In the U.S., almost 60 billion kilograms of the food that was available for consumption was lost or wasted in 2010 at the household and retail level, also representing 30.4% of the U.S. food supply.

Of the 60 billion kilograms of food lost or wasted in the U.S., the distribution between households and the retail level was the same as in Canada.

The rates of food loss and waste by commodity in the U.S. are also similar to those of Canada.

Chart A.6
Retail and Household Food Loss and Waste as a Proportion of the Commodity Food Supply, U.S., 2010



Source: AAFC calculations using USDA Loss-Adjusted Food Availability (LAFA) data . These calculations are based on the share of retail and household waste relative to the total supply of each commodity.

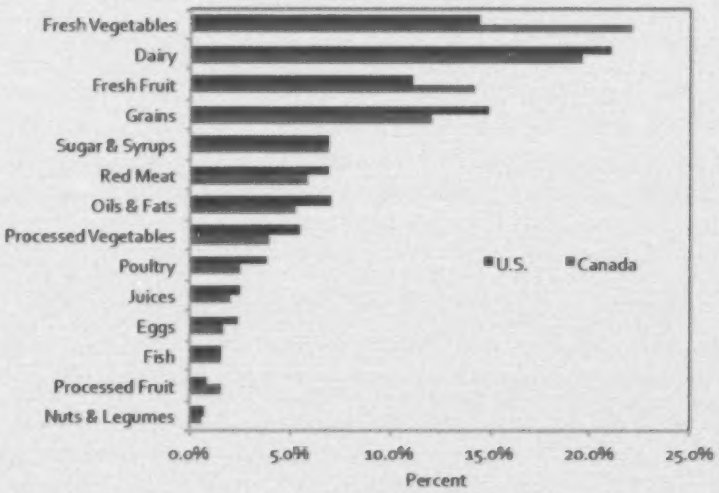
The distribution of total food loss and waste at the household and retail levels is similar between Canada and the U.S.

The distribution of total food loss and waste from households and retail levels in Canada and the U.S. varies by commodity.

In Canada, fresh vegetables accounted for the highest share (22.0%)of total food loss and waste while dairy accounted for the second highest share (19.5%) in 2010. In the U.S. dairy accounted for the highest share (21.0%) of food loss and waste and grain products accounted for the second highest share (14.9%) in 2010.

In Canada fresh fruit accounted for a higher share of total food loss and waste, at 14.2% in 2010, compared to the U.S., where its share was 11.1% of the total. This was due in part to higher per capita fresh fruit consumption in Canada.

Chart A.7
Retail and Household Food Loss and Waste by Commodity as a Proportion of Total Food Loss and Waste, 2010



Source: AAFC calculations using Statistics Canada and USDA data.

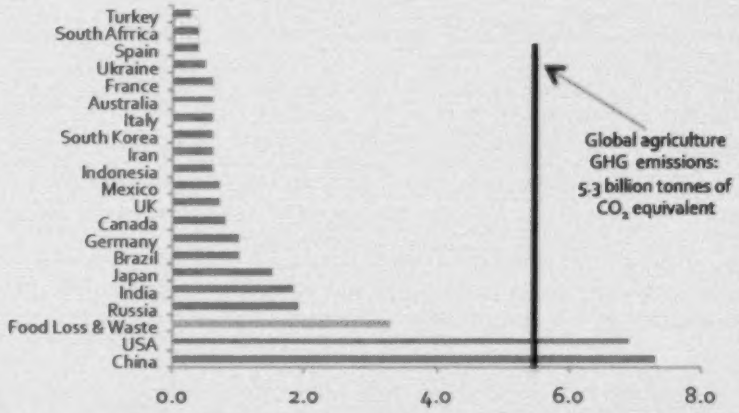
Food loss and waste, when expressed in units of greenhouse gas emissions (GHG), is significant

The impact of food loss and waste has been estimated at 3.3 billion tonnes of CO_2 equivalent in 2007.

When placed in the context of a ranking of the top GHG emitting countries, food loss and waste ranks third.

Total global GHG emissions from food loss and waste were estimated at more than two times the emissions from U.S. road transportation in 2010 (1.5 billion tonnes of CO_2 equivalent).

Chart A.8
Total Domestic Green House Gas Emissions, Selected Countries, 2007



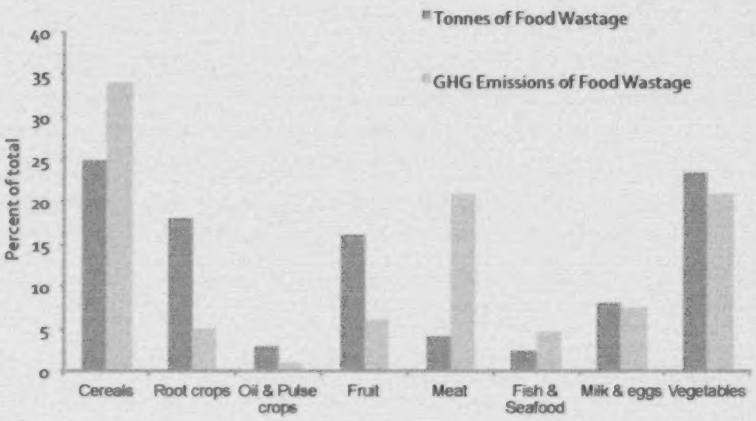
Source: Adapted from FAO, 2013, Food Wastage Footprint: Impacts on Natural Resources,Technical Report.

The GHG emissions from food loss and waste vary by commodity.

Cereal crops accounted for both the largest share of food lost or wasted and the largest share of GHG emissions at 25.0% and 34.0% respectively in 2007.

Animal products accounted for a smaller share of total food loss and waste volume but their carbon foot print was relatively high at 21.0% of total GHG emissions from food loss and waste, matching that of vegetables.

Chart A.9
Distribution of Total Food Loss and Waste and GHG Emissions by Commodity, 2007



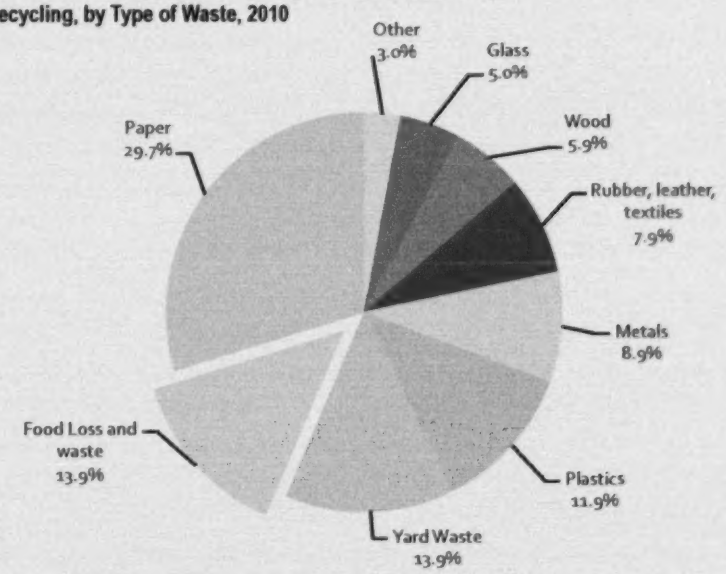
Source: Adapted from FAO, 2013, Food Wastage Footprint: Impacts on Natural Resources, Technical Report (Figure 44).

Food loss and waste have additional impacts on the environment through land fills; in the US they are estimated to account for a significant share of solid waste materials

According to the U.S. Environmental Protection Agency (EPA), solid waste generation in the U.S. amounted to 250 million tons in 2010.

Of this, Food Loss and Waste accounted for 13.9% or 34 million tonnes at a cost of $1.3 billion to landfill sites.

Chart A.10
Share of Total Municipal Waste in the United States Before Recycling, by Type of Waste, 2010

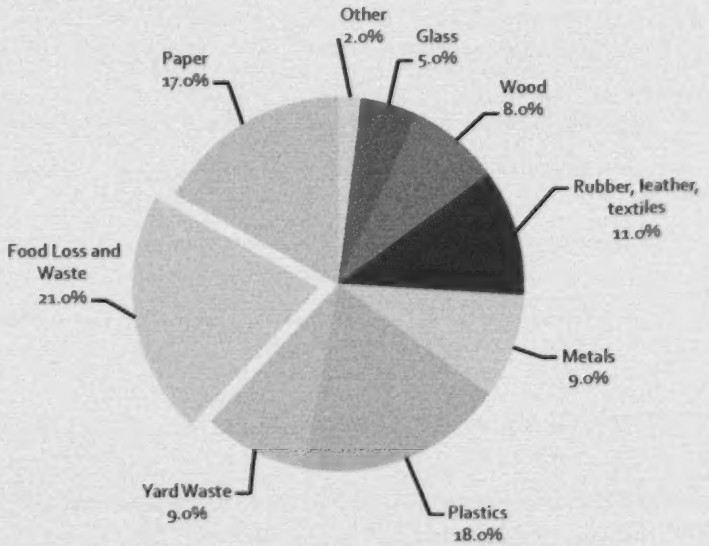


Source: Buzby et al, 2014. Economic Research Service calculations based on US Environmental Protection Agency (US-EPA) data.

After accounting for recycling, total municipal solid waste generation amounted to 161 million tonnes.

After accounting for recycling, Food Loss and Waste represented the largest share of total municipal solid waste (21.0%) in 2010.

Chart A.11
Share of Total Municipal Waste in the U.S., After Recycling, by Type of Waste, 2010



Source: Buzby et al, 2014. Economic Research Service calculations based on US Environmental Protection Agency (US-EPA) data.

SECTION B

SECTION B

GDP and Employment

Introduction:

The Canadian agriculture and agri-food system (AAFS) is a complex and integrated supply chain which includes input and service suppliers, agricultural producers, food and beverage processors, food retailers and wholesalers, and foodservice providers. The AAFS makes significant direct and indirect contributions to the gross domestic product (GDP) and employment in Canada.

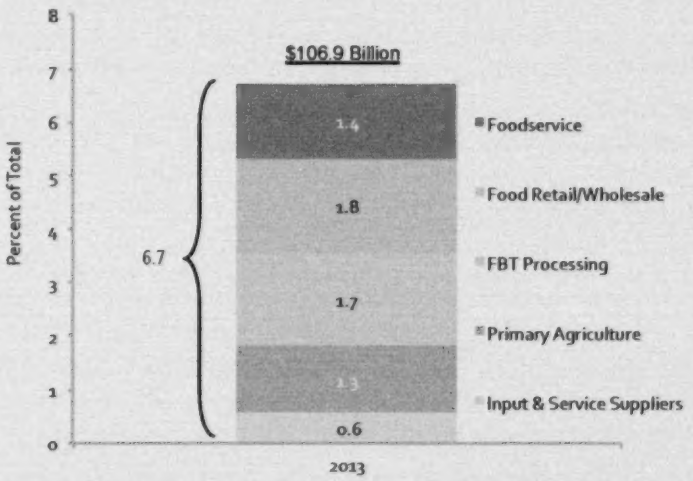
The AAFS Contributed 6.7% of Canadian GDP and one in eight Canadian jobs in 2013. The GDP of the AAFS has increased annually since 2007, the exception being during the economic recession of 2009. The food retail and foodservice industries have experienced the highest growth, while growth in the primary agriculture and food and beverage processing industries have been less consistent. In 2013, employment in most industries in the AAFS also continued their upward trend.

The agriculture and agri-food system (AAFS) plays a significant role in the Canadian economy

In 2013, the AAFS generated $106.9 billion of economic activity, a 3.1 % growth over that of the previous year and accounted for 6.7% of Canada's gross domestic product (GDP).

Across sectors, the AAFS was the seventh-largest contributor to the Canadian GDP, following: finance non-food manufacturing; mining; oil and gas extraction; construction; public administration; and health care sectors.

Chart B.1
Agriculture and Agri-Food System's Contribution to total Canadian GDP, 2013

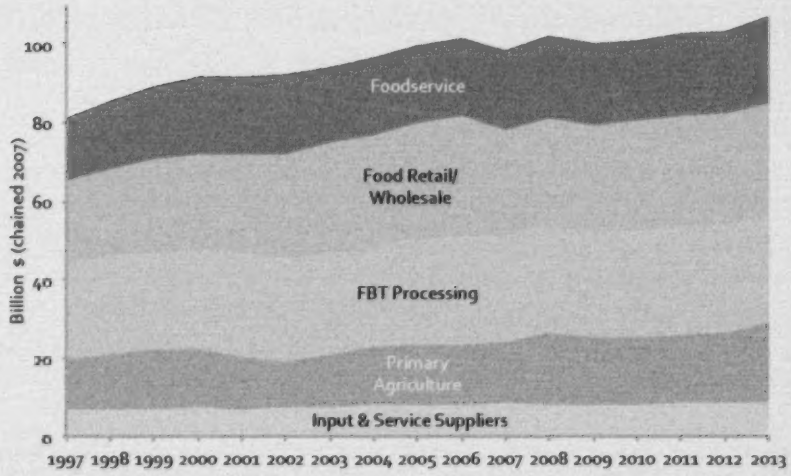


Source: Statistics Canada and AAFC calculations.
Note: *2013 data is preliminary and subject to revisions. Due to rounding, figures may not add up exactly. Data were rebased (2007$) in 2013 and cannot be compared to those in previous editions of this report.

The food retail/wholesale industry accounted for the largest share of the AAFS's GDP with $28.2 billion, representing 1.8% of Canada's GDP.

It was followed by the food, beverage and tobacco (FBT) processing industry, worth $27.7 billion and accounting for 1.7 % of GDP, the foodservice industry worth $22.1 billion and representing 1.4% of GDP, primary agriculture, worth $20.0 billion and accounting for 1.3% of GDP, and the input and service suppliers, worth $9.0 billion and representing 0.6 % of Canada's GDP.

Chart B.2
GDP of the Agriculture and Agri-Food System, 1997-2013


Billion $ (chained 2007)
Foodservice
Food Retail/ Wholesale
FBT Processing
Primary Agriculture
Input & Service Suppliers
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

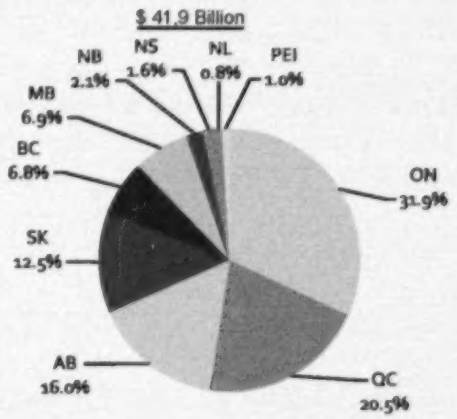
Source: Statistics Canada and AAFC calculations.
Note: 2013 data is preliminary and subject to revisions.

The primary agriculture and food processing sectors are important contributors to the economies in most provinces

Of the GDP generated by the Canadian primary agriculture and food processing sectors in 2013, more than half (52.4%) was attributed to Ontario and Quebec.

With 31.9%, Ontario accounted for the largest share of the combined GDP of these two sectors, while Quebec and Alberta accounted for 20.5% and 16.0% respectively.

Chart B.3
Provincial Contribution to Total Canadian Agriculture Food Processing GDP, *2013



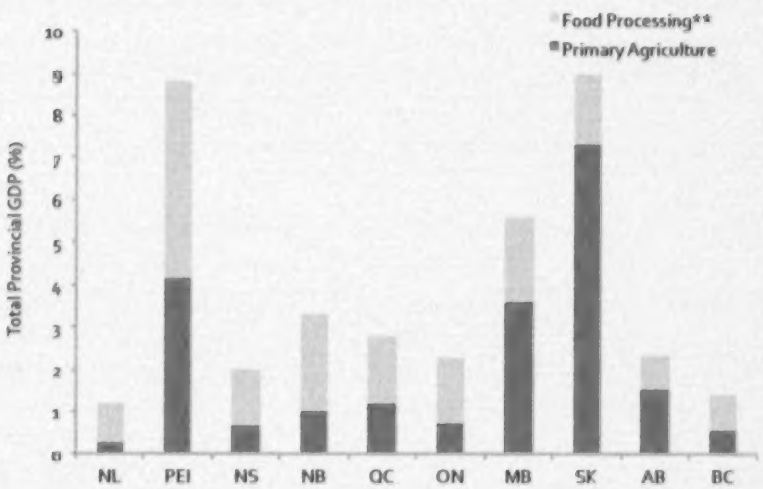
Source: Statistics Canada and AAFC calculations.
Note: Excludes beverage and tobacco processing.
*2013 data is preliminary.

Across the provinces, Primary Agriculture and Food Processing sectors accounted for varying shares of the provincial GDP.

In 2013, the primary agriculture and food processing sectors generated the most economic output in both Saskatchewan and Prince Edward Island, accounting for 9.0% and 8.8% of the GDP in those provinces, respectively.

Except in the provinces of Manitoba, Saskatchewan and Alberta, food processing accounted for a larger share of the provincial GDP than did primary agriculture.

Chart B.4
Agriculture and Food Processing Sectors Contribution to Provincial GDP, 2013*



Source: Statistics Canada and AAFC calculations.
Note: ** Excludes beverage and tobacco processing.
*2013 data is preliminary.

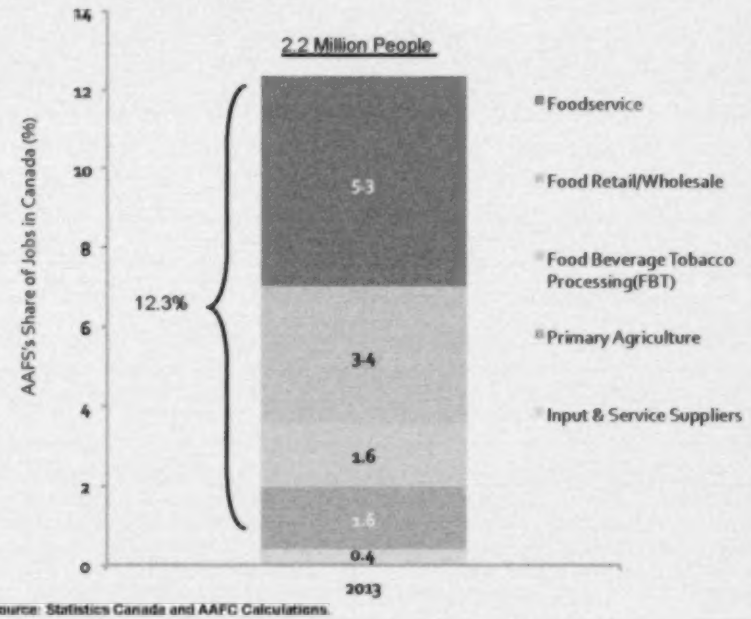
The agriculture and agri-food system provides jobs to many Canadians

In 2013, the AAFS provided one in eight jobs in Canada, employing over 2.2 million people.

Primary agriculture accounted for 1.6% of all Canadian jobs in 2013, and employed 285,700 people. The FBT processing industry also accounted for 1.6% of Canadian jobs and, employed 284,400 people.

With 945,000 workers, the foodservice industry was the largest employer in the AAFS and accounted for 5.3% of Canadian jobs in 2013.The food retail/wholesale industry followed with 3.4% of all Canadian jobs.

Chart B.5
Agriculture and Agri-Food System's Contribution to Total Canadian Employment, 2013



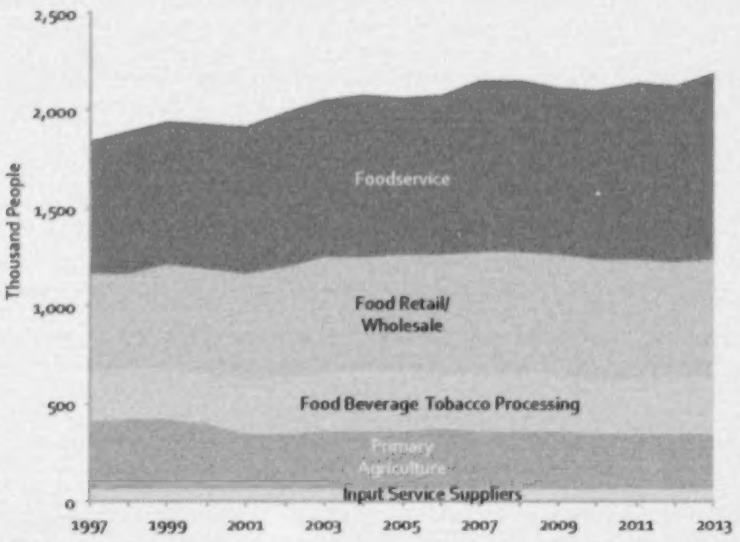
Source: Statistics Canada and AAFC Calculations.

Employment in the AAFS grew by 3.4 % between 2009 and 2013. In comparison, employment across all sectors of the Canadian economy grew by 5.5% over the same period.

Employment by food retail/wholesale industries, food service, primary agriculture, processing industry increased in 2013 from the previous year by 5.2%, 4.3% and 1.1% respectively.

Employment by both FBT processing and input service suppliers decreased by 4.9% and 1.0%, respectively from the previous year.

Chart B.6
Employment in the Agriculture and Agri-Food System, 1997-2013



Source: Statistics Canada and AAFC calculations.

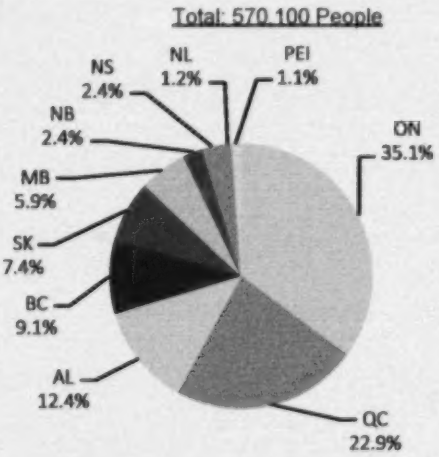
The agriculture and agri-food system is a major employer in most provinces

Ontario and Quebec account for most of the workforce in Primary Agriculture and food processing.

In 2013, Ontario accounted for 32.7% of the combined workforce of the primary agriculture and food processing sectors, while Quebec and Alberta accounted for 22.9% and 15.0%, respectively.

Employment across Canada in the primary agriculture and food processing sectors decreased by 1.8% from 2012 to 2013. Employment growth varied by province, with the largest increase seen in Alberta at (18.4%) and the largest decrease found in Newfoundland and Labrador at -12.1%.

Chart B.7
Provincial Contribution to Total Agriculture and Food Processing Employment, 2013*



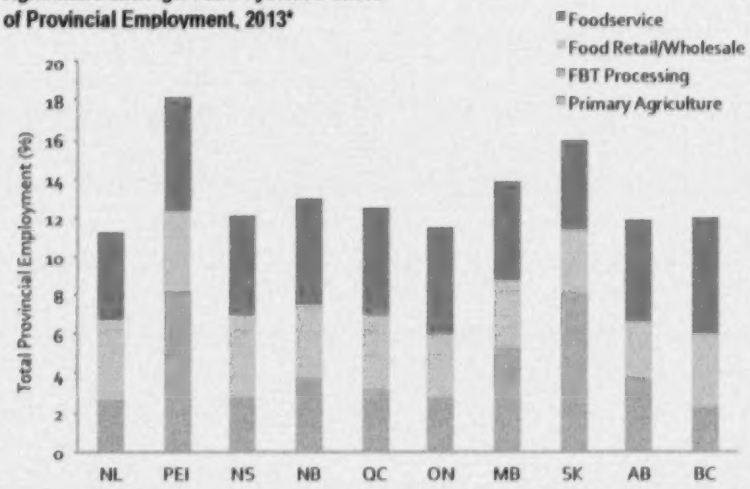
Source: Statistics Canada and AAFC calculations.
Note: Excludes beverage and tobacco processing.* 2013 data is preliminary.

In 2013, the AAFS accounted for the largest share of provincial employment in Prince Edward Island and Saskatchewan, with 18.1% and 16.9% of the provincial jobs, respectively.

In most provinces, the foodservice industry provided the largest share of AAFS jobs, followed by the food retail/ wholesale industry.

The exception was Saskatchewan, where primary agriculture accounted for the largest share (7.2%) of the jobs. In Prince Edward Island and Manitoba, primary agriculture was the second-largest employer (after foodservice).

Chart B.8
Agriculture and Agri-Food System's Share of Provincial Employment, 2013*



Source: Statistics Canada and AAFC calculations.
Note: Provincial input & service suppliers have been excluded because of confidentiality with many of its component industries.*2013 data is preliminary.

SECTION C

SECTION C

International Trade

Introduction:

As a major agricultural producer, in a small open economy, producing over and above what is consumed domestically for most agricultural commodities, Canada's agriculture and agri-food sector continues to depend on exports. Canada also relies on imported products to meet consumer demand for certain agriculture and agri-food products on a year round basis.

Canadian trade in agriculture and agri-food products continued to grow in 2013 due in part to higher prices and volumes for both imports and exports relative to 2012. Exports in 2013 reached $46.0 billion while imports totaled $34.3 billion. The U.S. continued to be Canada's most important trading partner, with exports to the U.S. growing substantially in 2013.

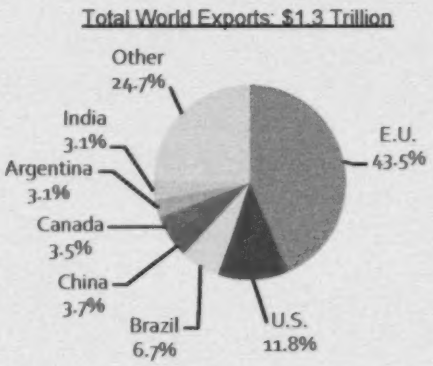
Canada is an important player in the international trade of agriculture and agri-food products

Canada was the world's fifth-largest exporter of agriculture and agri-food products after the E.U., the U.S., Brazil, and China in 2013.

Canada, with export sales of $46.0 billion, accounted for 3.5% of the total value of world agriculture and agri-food exports in 2013.

World agriculture and agri-food trade exports was valued at $1.3 trillion in 2013, up from $1.2 trillion in 2012.

Chart C.1
World Agriculture and Agri-Food Export Share by Country of Origin, 2013



Source: Global Trade Atlas and AAFC calculations.
Notes:1) Excludes All Seafood - Fresh and Processed.
2) Includes intra-E.U. Trade.

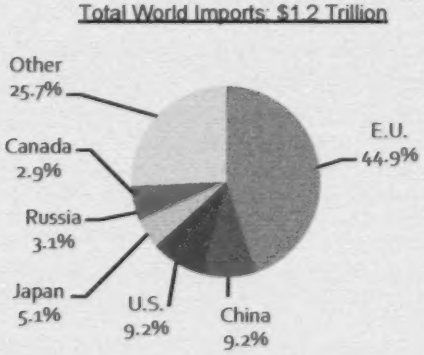
Canada remained the world's sixth-largest importer of agriculture and agri-food products after the E.U., China, the U.S., Japan and Russia.

Canadian imports of agriculture and agri-food products amounted to $34.3 billion in 2013 which accounted for 2.9% of the total value of world agriculture and agri-food imports.

In 2013, China surpassed the U.S. to become the world's second-largest importer of agriculture and agri-food products after the E.U.

The E.U. trade shares reflect trade between the twenty-seven individual members of the E.U. in addition to trade between the E.U. and the rest of the world.

Chart C.2
World Agriculture and Agri-Food Import Share by Country of Destination, 2013



Source: Global Trade Atlas and AAFC calculations.
Notes:1) Excludes All Seafood - Fresh and Processed.
2) Includes intra-E.U. Trade.

The U.S. remained Canada's largest and most important agriculture and agri-food export destination in 2013

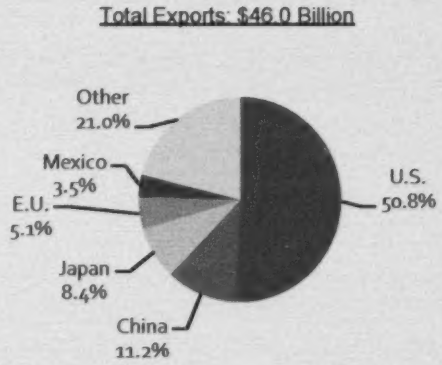
In 2013 the U.S. accounted for 50.8% of the value of all Canadian agriculture and agri-food exports.

China, Japan, the E.U. and Mexico accounted for an additional 28.2% of Canadian agriculture and agri-food exports. One hundred sixty (160) countries accounted for the remainder of Canadian export sales.

In 2013, Canadian exports accounted for 20.5% of the total U.S. imports of agriculture and agri-food products in 2013.

Canada's share of the Chinese import market was 4.8% in 2013.

Chart C.3
Destination of Canadian Agriculture and Agri-Food Exports, 2013



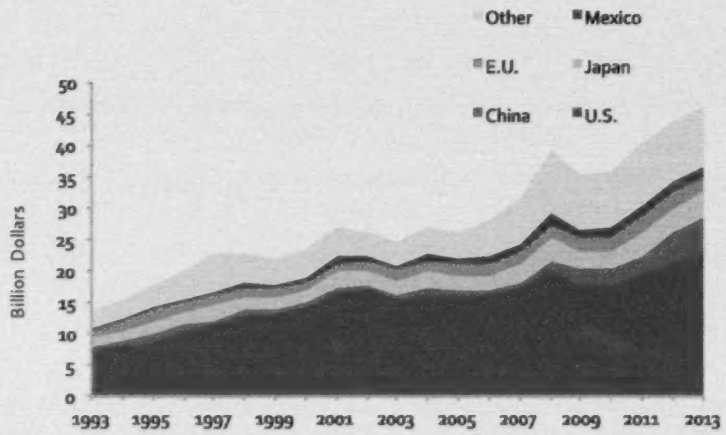
Source: Statistics Canada and AAFC calculations.

Canadian agriculture and agri-food export values grew by 5.5% to $46.0 billion in 2013, mainly due to an increase in exports to the U.S.

Exports to the U.S. grew by 10.8% in 2013 to $23.4 billion. Exports to non-U.S. markets increased by 6.0% over the same period to reach $22.7 billion.

Exports to China, which grew by 84.0% in 2012, grew by 3.5% in 2013 to reach $5.2 billion.

Chart C.4
Destination of Canadian Agriculture and Agri-Food Exports, 1993-2013



Source: Statistics Canada and AAFC calculations.

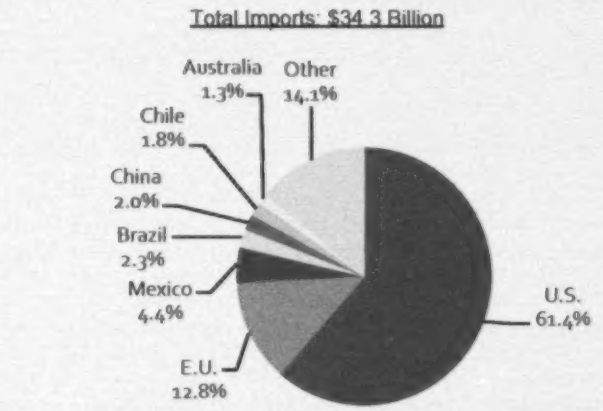
The value of Canadian agriculture and agri-food imports amounted to $34.3 billion in 2013, and the U.S. remained the main source of Canadian imports

The U.S. accounted for 61.4% of the value of Canadian agriculture and agri-food imports in 2013.

The E.U. accounted for 12.8% of total imports.

Mexico, Brazil, China, Chile and Australia together accounted for 10.5% of the value of Canadian imports.

Chart C.5
Origins of Canadian Agriculture and Agri-Food Imports, 2013



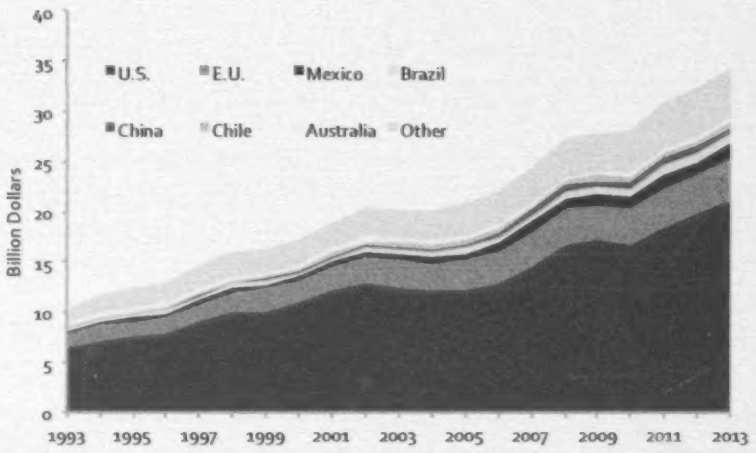
Source: Statistics Canada and AAFC calculations.

The value of Canadian agriculture and agri-food imports grew to $34.3 billion in 2013, up 6.0% from 2012.

Imports from the U.S. grew by 6.4% to $21.0 billion between 2012 and 2013.

The E.U. is also an important source of Canadian agriculture and agri-food imports, with the value of imports increasing by 10.7% to $4.4 billion in 2013.

Chart C.6
Origins of Canadian Agriculture and Agri-Food Imports, 1993-2013



Source: Statistics Canada and AAFC calculations.

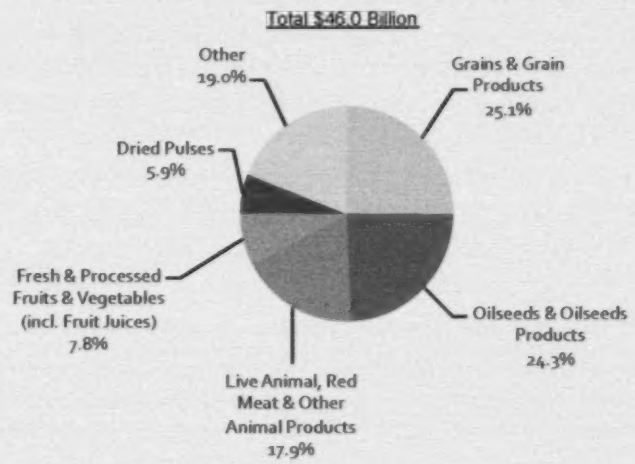
Three main commodity groups accounted for over two-thirds of all Canadian agriculture and agri-food exports

Of the $46.0 billion in Canadian agriculture and agri-food exports in 2013, grains and grain products accounted for 25.1%, followed by oilseeds and oilseed products at 24.3%, and live animals, red meat and other animal products at 17.9%.

Other important export products included fresh and processed fruits and vegetables (including fruit juices) (7.8%) and dried pulses (5.9%).

Canada was the world's largest dried pulse exporter in 2013, with over $2.7 billion in export sales.

Chart C.7
Commodity Composition of Canadian Agriculture and Agri-Food Export Sales, 2013


Total $46.0 Billion
Other 19.0%
Grains & Grain Products 25.1%
Dried Pulses 5.9%
Fresh & Processed Fruits & Vegetables (incl. Fruit Juices) 7.8%
Oilseeds & Oilseeds Products 24.3%
Live Animal, Red Meat & Other Animal Products 17.9%

Source: Statistics Canada and AAFC calculations.

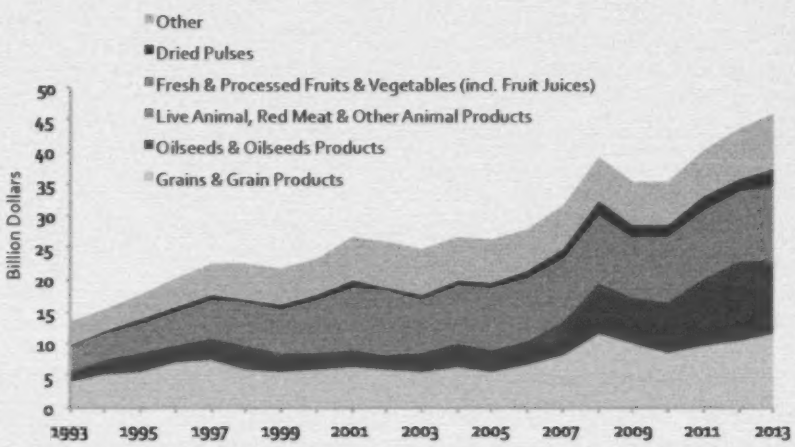
Export growth in 2013 occurred across a broad range of commodities.

Grains and grain product exports grew by 9.8% in 2013 to $11.5 billion.

Exports of live animals, red meat and other animal products increased by 9.8% to $8.3 billion, while exports of fresh and processed fruits and vegetables (including fruit juices) increased 11.0% to $3.6 billion.

In contrast, oilseed and oilseed product exports declined by 10.3% to $11.2 billion in 2013.

Chart C.8
Canadian Agriculture and Agri-Food Export Sales by Commodity Groups, 1993-2013



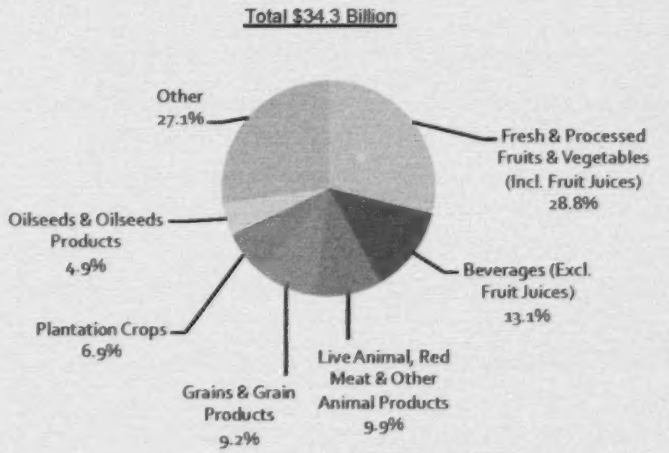
Source: Statistics Canada and AAFC calculations.

Canada imports a wide variety of agriculture and agri-food products

Imports of fresh and processed fruits and vegetables accounted for just over one-quarter of the total value of Canadian agriculture and agri-food imports in 2013.

Beverages (13.1%), and live animals, red meat and other animal products (9.9%) were the next largest import categories by value.

Chart C.9
Commodity Composition of Canadian Agriculture and Agri-Food Import Sales, 2013

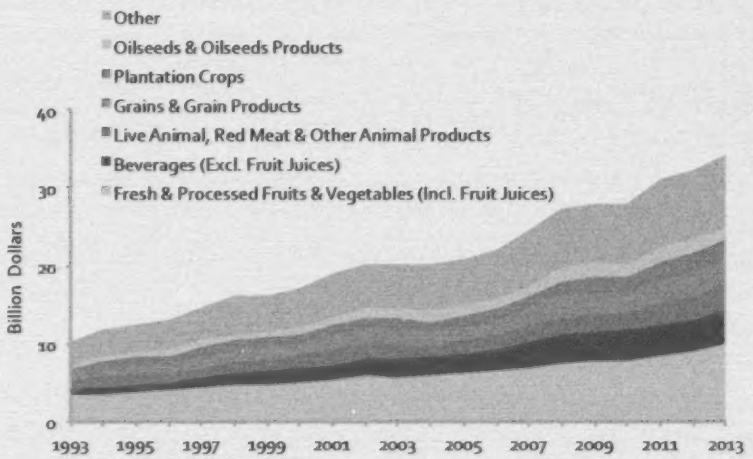


Source: Statistics Canada and AAFC calculations.

Imports of fresh and processed fruits and vegetables reached $9.9 billion in 2013, an increase of 10.1% over that of 2012.

Imports of beverages were up 7.0% in 2013 to $4.5 billion, while imports of live animals, red meats and other animal products increased 9.0% to $3.4 billion.

Chart C.10
Canadian Agriculture and Agri-Food Import Sales by Commodity groups, 1993-2013



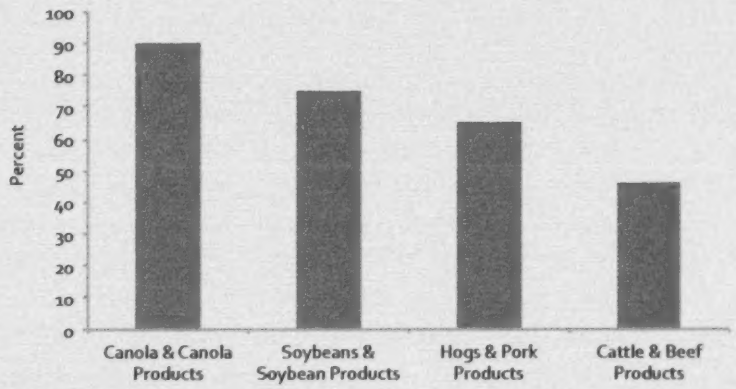
Source: Statistics Canada and AAFC calculations.

The Canadian agriculture and agri-food sector is highly export-focused

Agriculture and agri-food product exports are comprised of primary commodities, such as wheat, canola or live animals, and of further processed products, such as flour, canola oil or meat.

On a volume basis, over the 2011 to 2013 period, 46.0% of cattle and beef products, 65.0% of hogs and pork products, 90.0% of canola and canola products and 75.0% of soybeans and soybean products were exported.

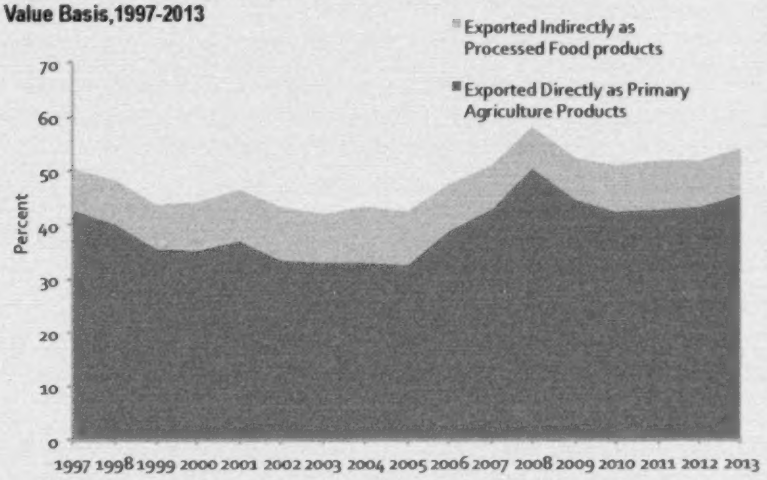
Chart C.11
Estimated Shares of Primary and Processed Agricultural Products that are Exported, Volume-Basis, Average 2011-2013



Source: AAFC.

On a value basis, it is estimated that approximately half of the value of primary agricultural production in Canada is exported, either directly as primary agricultural commodities or indirectly as processed food and beverage products.

Chart C.12
Estimated Share of Primary Agricultural Production that is Exported, Value Basis,1997-2013



Source: AAFC.

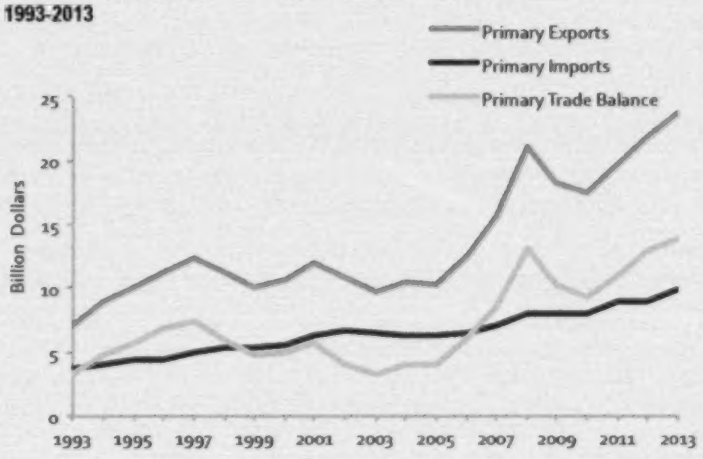
Primary and processed agriculture and agri-food trade continued to grow in 2013

Canada's trade surplus in primary agriculture has increased in recent years with exports increasing at a faster pace than imports.

Canadian exports of primary agricultural products (i.e. exports directly from the farm sector) increased by 8.2% in 2013 to $23.7 billion.

Import sales of primary agricultural products increased by 9.6% to $9.9 billion in 2013.

Chart C.13
Canadian Primary Agriculture Exports, Imports and Trade Balance, 1993-2013



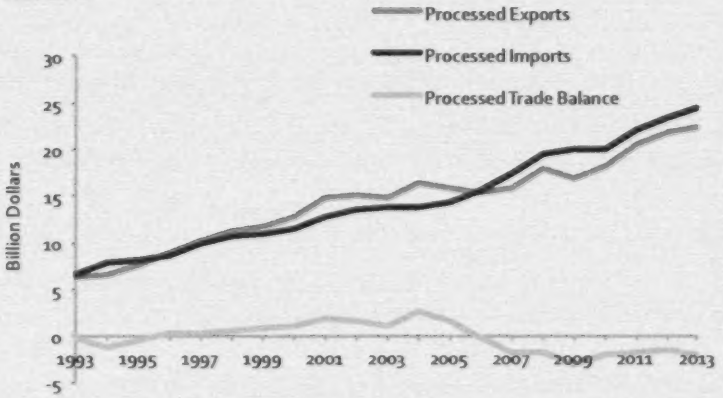
Source: Statistics Canada and AAFC calculations.

Canada has had a small but stable trade deficit in processed agricultural products since the mid-2000s.

Exports of processed agricultural products (i.e. agri-based products that have gone through processing in the manufacturing sector) increased by 2.9% in 2013 to $22.3 billion.

Imports of processed agricultural products to Canada increased by 4.7% to $24.4 billion in 2013.

Chart C.14
Canadian Processed Agricultural Products Exports, Imports and Trade Balance, 1993-2013



Source: Statistics Canada and AAFC calculations.

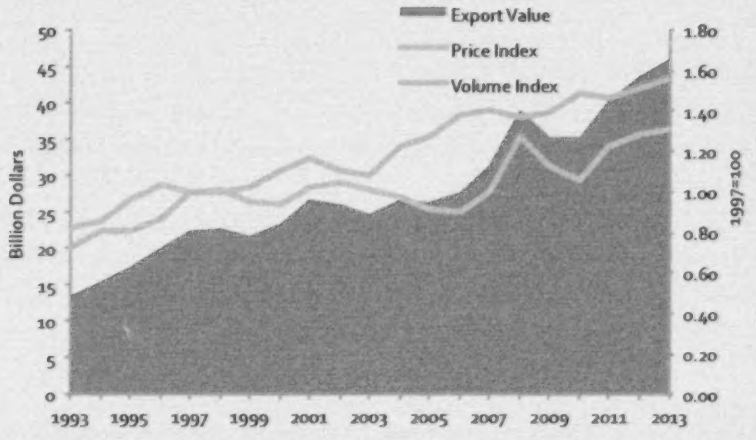
Values of imports and exports both grew in 2013 due to higher product prices and volumes

Export price growth of 2.4% and volume growth of 3.1% contributed to higher values for overall agriculture and agri-food exports in 2013 relative to 2012.

Higher export prices were observed for grain and grain products and live animals and for red meat and other animal products.

Volume growth was observed for grain and grain products; for live animals, red meat and other animal products; and for oilseed and oilseed products.

Chart C.15
Prices, Volumes and Values of Canadian Exports of Agriculture and Agri-Food Products, 1993-2013

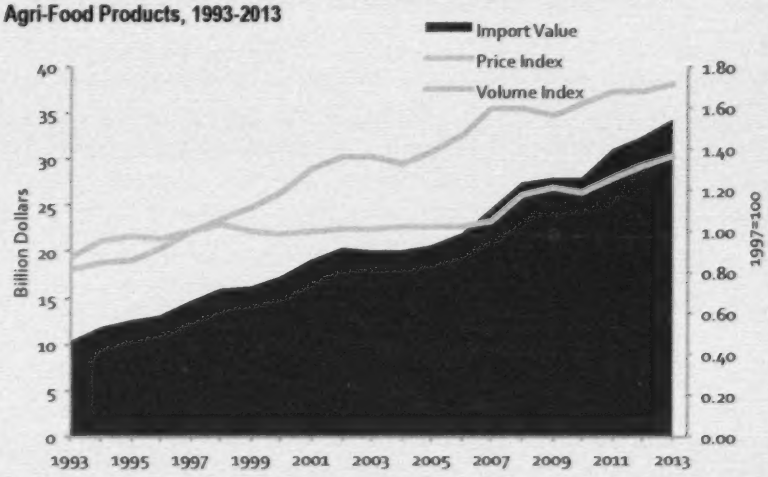


Source: Statistics Canada and AAFC calculations.

Import price growth of 4.2% and volume growth of 1.8% contributed to higher values for overall agriculture and agri-food imports in 2013 relative to 2012.

Higher import prices and volumes were observed for fresh and processed fruits and vegetables, for beverages, and for live animals, red meats and other animal products.

Chart C.16
Prices, Volumes and Values of Canadian Imports of Agriculture and Agri-Food Products, 1993-2013



Source: Statistics Canada and AAFC calculations.

SECTION D

SECTION D

Innovation

Introduction:

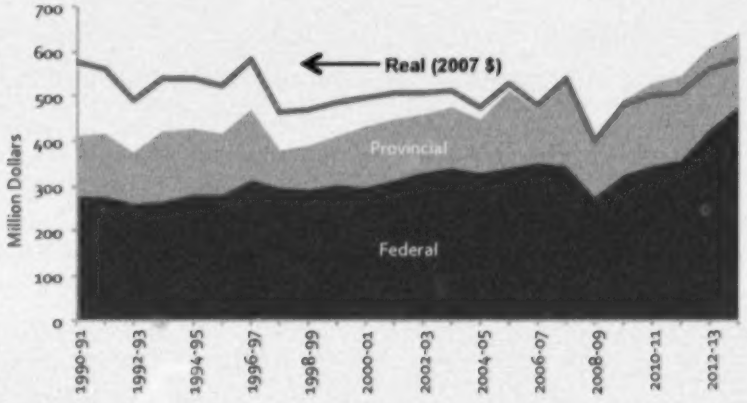
Innovation is the introduction of a new or significantly-improved product and/or process which results in more efficient production or higher returns. Investments in research and development (R&D), technological improvements and their adoption, diffusion and commercialization, contribute to improved productivity growth. This is vital for the agriculture and agri-food sector as it needs to continuously adapt and respond to competitive pressures, changing consumer demands, and global challenges and opportunities for long-term sustainability.

While the Canadian agriculture and agri-food sector has been benefiting from past investments in innovation, additional investments are needed to maintain its productivity growth and competitiveness. Public funding of R&D for the agriculture and agri-food sector has been increasing since 2008-09, whereas, real private sector R&D investment in the primary agriculture sector has been declining since 2009.

Public funding of research in support of the agriculture and agri-food sector, is estimated to rise to $643 million in the fiscal year 2013-2014.

Total public research expenditures in the sector has increased every year since the 2008-2009 fiscal year. Over this same period, the federal share of total R&D expenditures averaged 69.0%. After accounting for inflation, real government R&D expenditures (2007$) showed a declining trend until after the 2008-2009 fiscal year, when they began to increase. Expenditures in the fiscal year 2013-2014, however, are still below the peak of the 1996-1997 fiscal year.

Chart D.1
Public R&D spending in support of the Agriculture and Agri-Food sector, 1990-91 to 2013-14



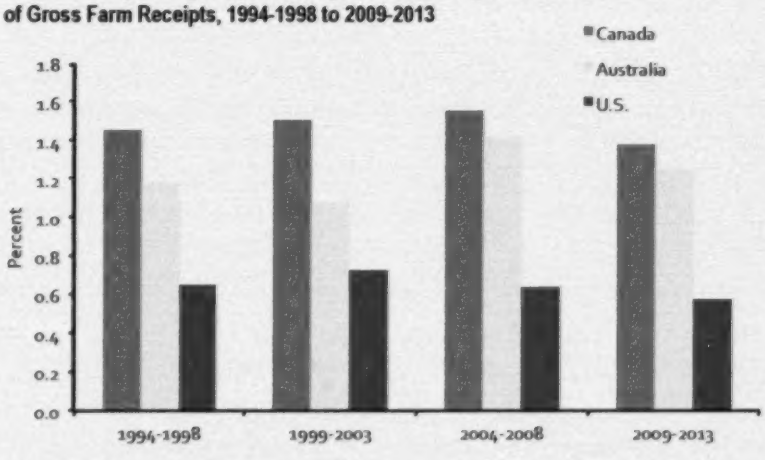
Source: AAFC.
Note: 2013-14 figures are estimates.
Real government expenditures on R&D in agriculture and agri-food have been deflated to 2007 dollars

Canada's public R&D spending in the agriculture and agri-food sector, as a share of gross farm receipts (GFR), has decreased recently. However it continues to surpass the U.S. and Australia.

During the 2009-2013 period, Canada's public agricultural R&D spending averaged 1.4% as a share of GFR, a decrease from the 1.6% average over the 2004-2008 period.

This indicator also decreased in Australia and the U.S. during the same period.

Chart D.2
Public R&D Spending Support the Agriculture and Agri-Food Sectors as a Share of Gross Farm Receipts, 1994-1998 to 2009-2013



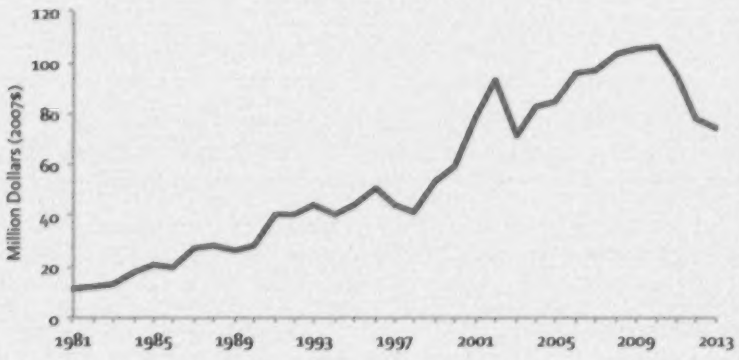
Source: OECD, Trade and Agriculture Directorate, Producer and Consumer Support Estimates, OECD Database.
Real government expenditures on R&D in agriculture and agri-food have been deflated to 2007 dollars

Private-sector R&D investments in agriculture and agri-food have grown considerably since 1980

Real private sector investments in research and development (R&D) in agriculture have grown steadily since the 1980s, when intellectual property rights (IPR) protection on new crop varieties was introduced.

Real private sector spending on primary agriculture amounted to $74.2 million in 2013, down from a peak of $102 million in 2008. Spending increased exponentially between 1998 and 2002, but has slowed more recently. The agricultural sector also benefits from research conducted by firms in related industries, such as seed developers, chemical companies, machinery companies, contract service providers, and biological and life science companies.

Chart D.3
Real Private Sector R&D Expenditures in Primary Agriculture, 1981-2013



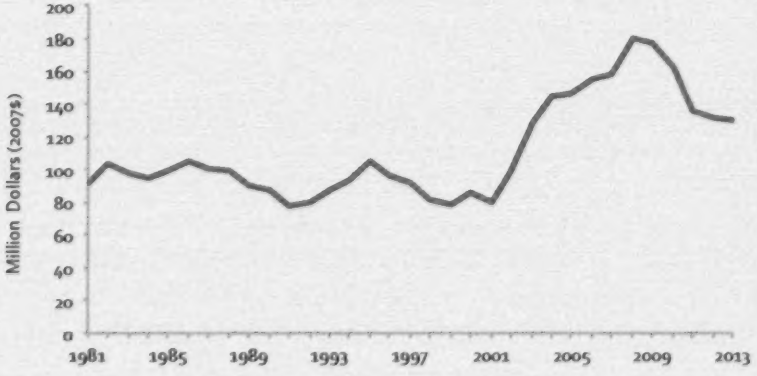
Source: Statistics Canada and AAFC calculations
Notes: 2010-2013 figures are preliminary. Data include all R&D expenditures (intramural) made by private industry regardless of whether the sources of funds were self-financing but does not include investments from the agricultural input sector.

Real private sector R&D expenditures in the food processing sector were estimated to have reached $130.3 million in 2013, representing a gradual decline from its peak of $179.4 million in 2008.

Real private sector R&D spending averaged $92.1 million annually between 1981 and 2000 and $140.6 million between 2001 and 2013.

Over the past decade, the food processing sector has benefited from innovation in food safety and preservation processes—such as the Hazard Analysis and Critical Control Points (HACCP) and flash freezing—as well as in inventory control (for example, the "just-in-time" inventory). Products are also being improved continually with the use of new ingredients and innovative packaging.

Chart D.4
Real Private Sector R&D Expenditures in Food Processing, 1981-2013



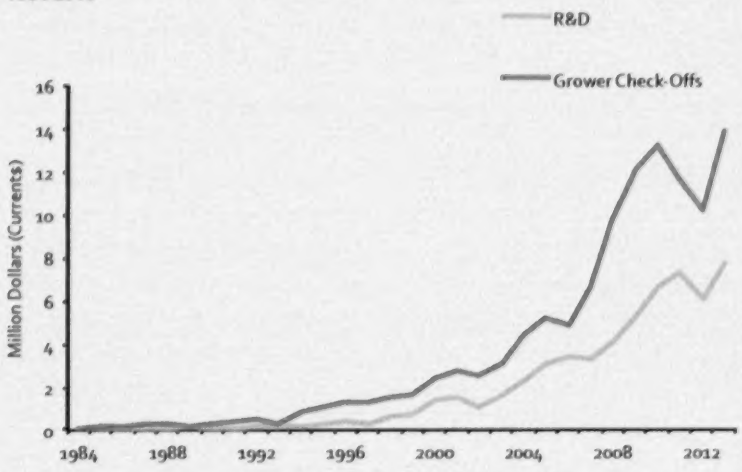
Source: Statistics Canada and AAFC calculations
Notes: 2010-2013 figures are preliminary. Data include all R&D expenditures (intramural) made by private industry regardless of whether the sources of funds were self-financing but does not include investments from the agricultural input sector.

Industry check-offs (levy on commercial sales paid by producers) are an important source of funding for R&D in agriculture for some commodities.

Check-offs have allowed producers to help finance and benefit from investments in commodity R&D. It has been the primary mechanism for financing the activities of the Saskatchewan Pulse Growers (SPG).

Revenues derived from check-offs by SPG in 2013 increased by 36.0% over the previous year, to reach $13.9 million mainly due to higher seeded and harvested area. Over the 2009-2013 period, R&D expenditures of SPG averaged $6.6 million which included a significant increase in research on genetic improvement and health outcomes.

Chart D.5
Saskatchewan Pulse Growers R&D Expenditures and Check-Offs, 1984-2013



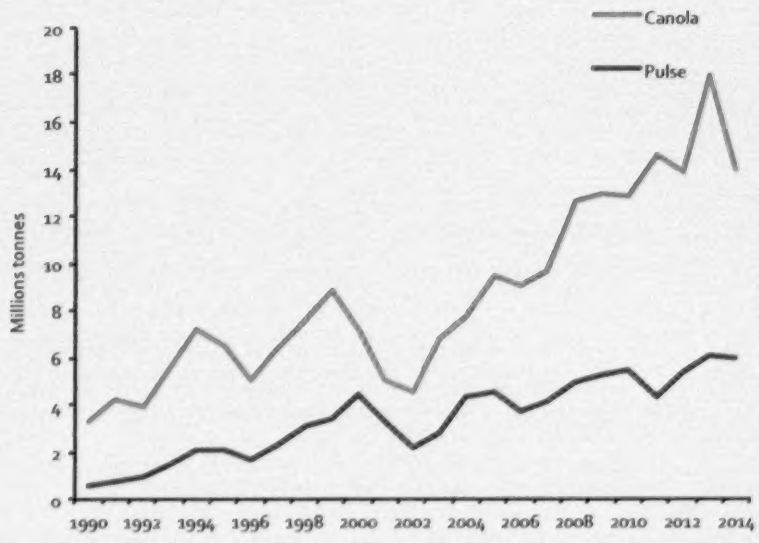
Source: Saskatchewan Pulse Growers Annual Report, various years.

The widespread adoption of crop varieties such as canola and pulse varieties has led to growth in output of these crops.

In 2014, canola production was over four times greater than in 1980, at almost 14 million tons of production.

Production of pulse crops has risen dramatically since the early 1990s. Production of dry beans and lentils in 2014 is more than 7 times the levels produced in the early 1990s. Saskatchewan has become a major world producer and exporter of pulse crops, accounting for 71.0% of pulse production in Canada in 2014.

Chart D.6
Pulse and Canola Production in Canada, 1990-2014



Source: Statistics Canada and AAFC calculations
Note: Pulse include dry peas, coloured beans, lentils and chickpeas

The extent to which innovation takes place in food manufacturing is demonstrated by the development of new product and process innovations

In general, the proportion of food manufacturing establishments that reported process or product innovations is less than the average for total manufacturing.

A significantly smaller proportion of food manufacturers developed new services (11.4%). On the other hand a larger share reported introducing new logistics or distribution methods 11.4%.

Chart D.7
Percent of Total Manufacturing and Food Manufacturing Enterprises that Introduced Product or Process Innovations, 2012

Source: Statistics Canada, Survey of Innovation and Business Strategy, 2012

New and improved goods and methods continued to be the most common innovations introduced by enterprises in both 2009 and 2012.

The introduction of new or significantly improved goods increased from 36.5% of food manufacturers to 39.7% but all other innovation areas experienced a decline between 2009 and 2012.

The proportion of food processing firms that introduced new methods declined from 45.0% in 2009 to 38.0% in 2012.

Chart D.8
Percent of Food Manufacturing Enterprises that Introduced Product or Process Innovations, 2009 and 2012

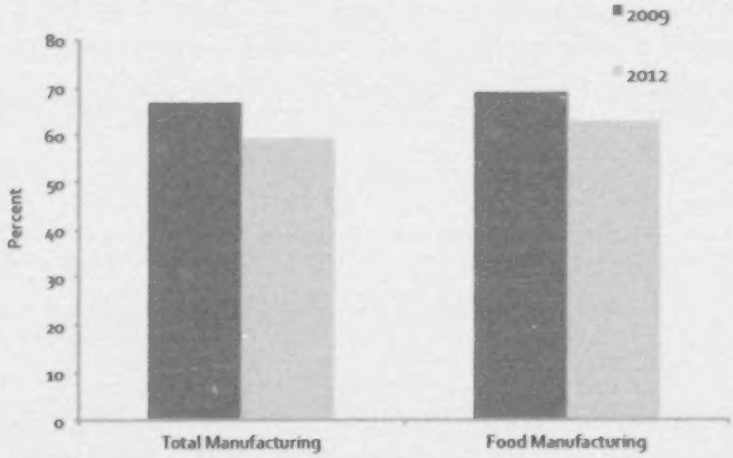
Source: Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012.

Process innovations have lowered the production cost of food manufacturing enterprises

In both 2009 and 2012, the share of enterprises in the food manufacturing sector that reported cost savings from process innovation was higher than that of total manufacturing.

In 2012, 62.6% of food manufacturers reported cost savings from process innovation, down from 68.9% in 2009.

Chart D.9
Percent of Total Manufacturing and Food Manufacturing Enterprises that Introduced Process Innovations that Reduced the Average Cost of Existing Products, 2009 and 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2012

Food manufacturing enterprises have been investing in the development of new products

Food manufacturers, in general, invested less in the development of new products than the manufacturing sector as a whole.

In 2012, 44.4% of food manufacturers who developed new product innovation invested less than $50,000. This share is considerably higher than that of the manufacturing sector as a whole (28.9%).

Only about 7.0% of food manufacturers invested $1 million or more on new product innovations, which is lower than the average for all manufacturing establishments (14.8%). The amount invested varies within the food manufacturing sector itself. In particular, the majority of meat product and fruit and vegetable manufacturers reported spending more than $200,000 on product innovations, while close to half of dairy product manufacturers reported spending less than $50,000. However, in both 2009 and 2012, about half of larger-scale food processers implemented new methods of manufacturing goods while less than a third of smaller-scale firms reported doing so in 2012, down from 41% in 2009.

Chart D.10
Total Manufacturing and Food Manufacturing Expenditures on Product Innovations, 2012

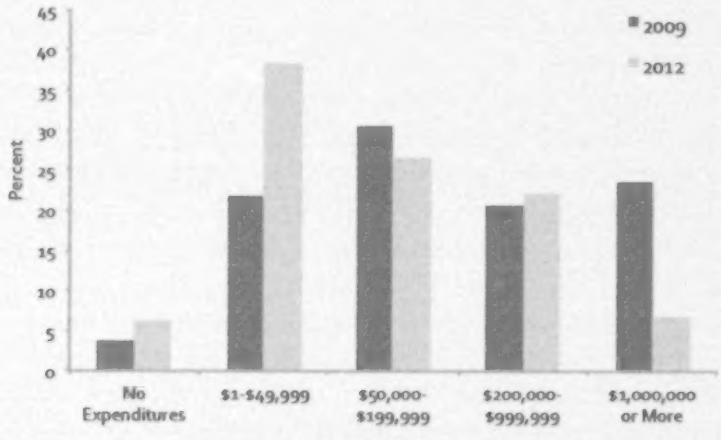
Source: Statistics Canada, Survey of Innovation and Business Strategy, 2012

Food manufacturing enterprises have been investing in the development of new products

Between 2009 and 2012, the proportion of innovative food manufacturers that reported making small investments (under $50,000) nearly doubled, while a much smaller share reported investments of $1,000,000 or more.

However, there was variation between the different types of food manufacturing enterprises. Close to half of innovative enterprises in the fruit and vegetable manufacturing sector reported investing $200,000 or more in 2012 which represents a substantial increase from 2009 (33.6%). On the other hand, the proportion of innovators in bakeries and tortilla manufacturers reported investing $200,000 or more dropped from 38.2% in 2009 to 22.3% in 2012.

Chart D.11
Food Manufacturing Expenditures on Product Innovations, 2009 and 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012

Food manufacturers continue to invest in process innovations to improve their production and distribution methods

Most process innovators from the food manufacturing sector spent less than $150,000 in developing new processes in 2012.

In 2012, only 13.6% reported investing $500,000 or more in the food processing sector whereas this figure was 20.6% for total manufacturing.

In 2012, close to 30% of process innovators in the food manufacturing sector reported investing between $150,000 and $499,999.

Chart D.12
Total Manufacturing and Food Manufacturing Expenditures on Process Innovations, 2012

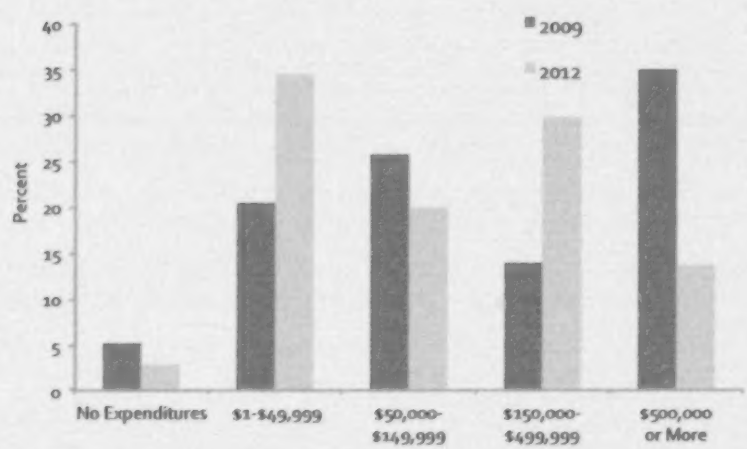
Source: Statistics Canada, Survey of Innovation and Business Strategy, 2012

The share of process innovators that reported investing $500,000 or more was less than half (13.5%) the level recorded in 2009 (34.8%).

Between 2009 and 2012, the proportion of food manufacturers investing between $150,000 and $499,999 in process innovations more than doubled.

In the dairy sub-sector, a lower proportion of process innovators reported investing less than $500,000 on process innovations.

Chart D.13
Food Manufacturing Expenditures on Process Innovations, 2009 and 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012

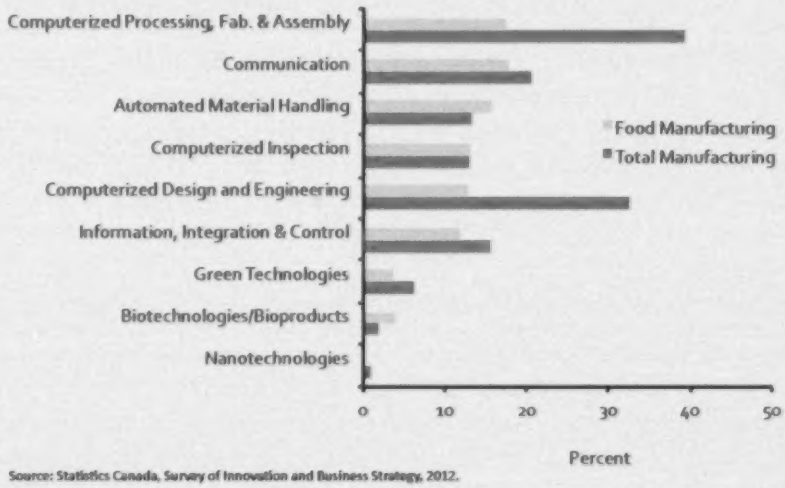
Food manufacturing establishments acquire various types of advanced technologies through different means

In 2012, the top advanced technologies used by food manufacturers were communication technology (17.6%), and computerized processing, fabrication and assembly technologies (17.2%).

Use of automated material handling, which includes technologies such as bar coding, ranked third with 15.5% of food manufacturers reporting its use.

The use of computerized processing, fabrication and assembly, as well as that of computerized design and engineering, is much more common in the manufacturing sector as a whole than in food manufacturing.

Chart D.14
Total Manufacturing and Food Manufacturing Enterprises Reporting Using the Following Types of Advanced Technologies, by Type, 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2012.

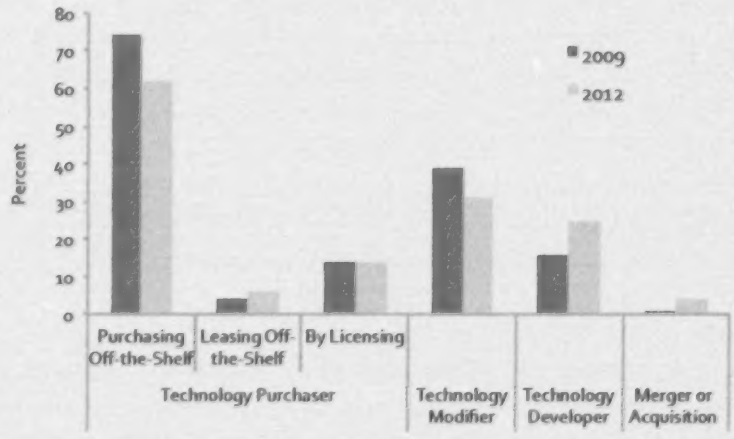
Food manufacturers tend to acquire advanced technologies by purchasing technology off-the-shelf, as in-house development is much more costly.

Over 60.0% of food manufacturing establishments reported purchasing off-the-shelf advanced technology in 2012.

By sub-industry, 74.7% of fruit and vegetable manufacturers purchased off-the-shelf technologies, followed by 71.0% of dairy processors. This is comparable to total manufacturing.

Modifying existing technologies is also a common method of acquiring new technologies in food manufacturing particularly in meat manufacturing.

Chart D.15
Food Manufacturing Enterprises Reporting Acquiring or Integrating Advanced Technologies, by Means, 2009 and 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012

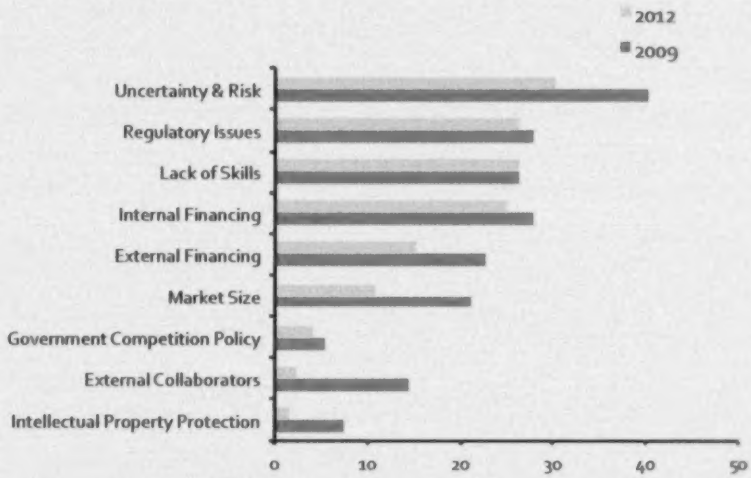
Food processors have access to government programs to help address some of the obstacles to innovation

In 2012, 30.2% of food manufacturers reported uncertainty and risk as a major factor impeding innovation.

However, 51.5% of other obstacles that impeded innovation activities included regulatory issues (26.4%), the lack of skills in the workforce (26.3%) and issues related to internal financing (25.1%).

The proportion of food manufacturers reporting obstacles to innovation declined between 2009 and 2012.

Chart D.16
Percent of Food Manufacturing Enterprises Reporting Obstacles to Innovation, 2009 and 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012.

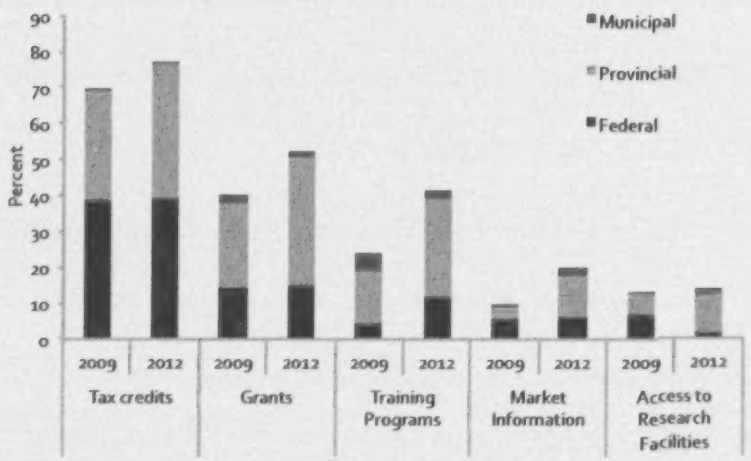
Food manufacturing enterprises reported that various government support programs were used to overcome obstacles to innovation.

In 2012, government tax credits were the most critical government program for innovation activities in the food manufacturing sector.

Provincial government programs were the most popular among food manufacturers, particularly for fruit and vegetable manufacturers.

Programs offered at the municipal level were mostly used by bakeries and tortilla manufacturers.

Chart D.17
Main Government Programs in Support of Innovation Activities in Food Manufacturing, 2009 and 2012



Source: Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012

SECTION E

Primary Agriculture

SECTION E1

Farm Financial

Introduction:

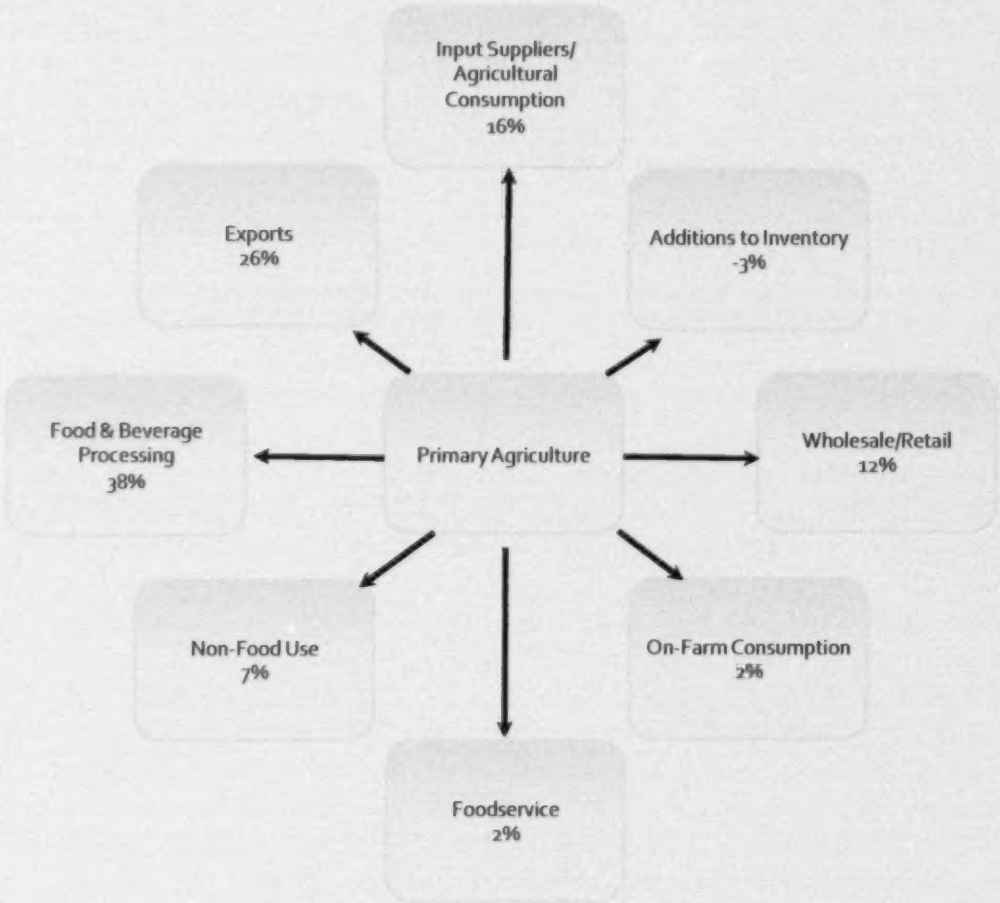
Agricultural producers are the foundation of the agriculture and agri-food system and have direct links to all stages in the supply chain. They contribute significantly to economic growth in the Canadian economy through these linkages. Developments in primary agriculture impact the structure and performance of all sectors along the chain, such as farm inputs, food processing, food retail/wholesale and food service.

Farm market receipts have continued to trend up, driven primarily by growth in grains and oilseeds. Average net operating income has also increased buoyed by increasing market receipts, despite reduced program payments.

Agricultural producers have direct links to all the stages in the agri-food supply chain

Both upstream and downstream industries make use of agricultural production.

Chart E.1.1
Disposition of the Value of Agriculture Production, 2010



Source: Statistics Canada Input/Output Model and AAFC calculations.

The composition of agricultural sales varies over time and by region

The distribution of farm market receipts by agriculture commodity groups has evolved since 2003 and grown by almost $23.0 billion.

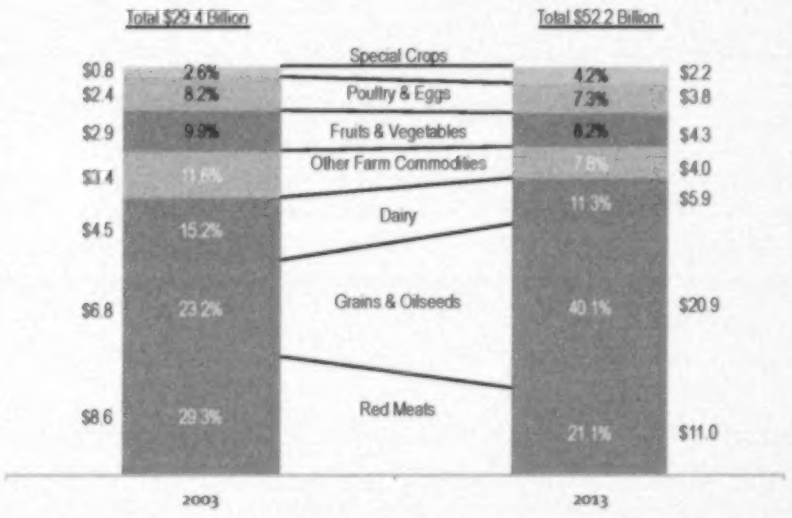
Between 2003 and 2013, the share of total farm market receipts from grains and oilseeds and special crops increased while the share of all other commodity groups decreased.

During that period, grains and oilseeds receipts tripled in value to represent 40.1% of all market receipts in 2013.

Receipts from the sale of special crops (pulses, mustard, sunflower and canary seed) more than doubled between 2003 and 2013 and accounted for 4.2% of all market receipts in 2013, up from 2.6% in 2003.

The share of red meat receipts declined over that period, falling from 29.3% to 21.1%, but the total amount has grown by $2.4 billion.

Chart E.1.2
Commodity Share of Total Farm Market Receipts, 2003 and 2013



Source: Statistics Canada

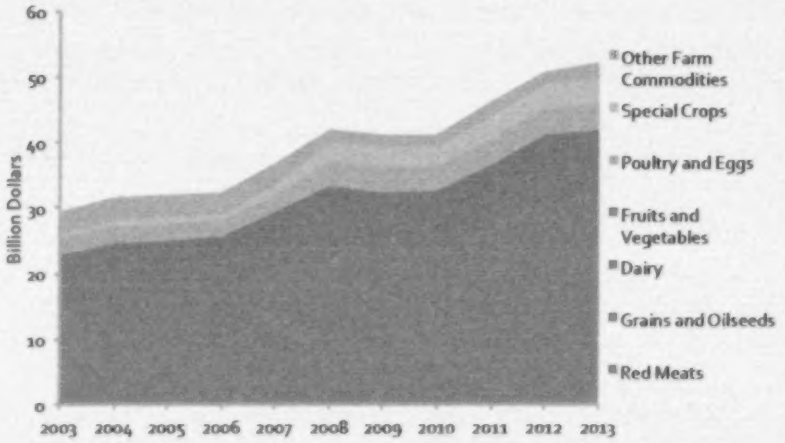
With record crop production and strong commodity prices, farm market receipts remained strong in 2013

Farm market receipts reached $52.2 billion in 2013, 3.6% higher than the previous year and the third consecutive annual increase.

Although grains and oilseeds receipts remained fairly stable in 2013, they were 29.2% higher than the 2008-2012 average. Grains and oilseeds receipts remained strong in 2013 because of a record harvest and strong prices for the first half of the year.

Cattle receipts have increased for four consecutive years due to strong cattle prices. Strong hog prices contributed to a 5.4% increase in hog receipts in 2013. While most commodity groups only saw modest increases in receipts between 2012 and 2013, special crops increased by 17.4% largely due to increased pulse crop production.

Chart E.1.3
Farm Market Receipts by Commodity, 2003-2013



Source: Statistics Canada

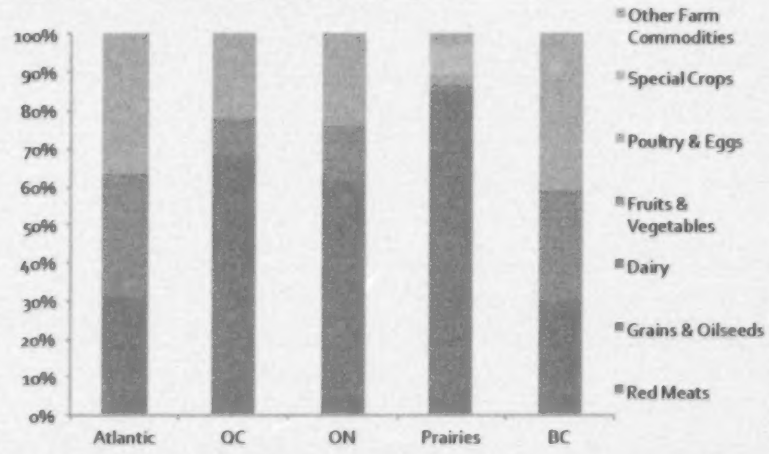
The distribution of farm market receipts among commodity groups varies by region.

In the Prairies, more than half (57.6%) of the farm market receipts in 2013 came from the sale of grains and oilseeds. Grains and oilseeds also accounted for the largest share (28.4%) of farm market receipts in Ontario.

In Quebec, the dairy industry accounted for the largest share (28.3%) of farm market receipts.

In British Columbia and the Atlantic region, fruits and vegetables accounted for the largest share of all farm market receipts at 29.4% and 32.3% respectively.

Chart. E.1.4
Regional Farm Market Receipts by Commodity, 2013



Source: Statistics Canada.

Net cash income reached record levels in 2013 for the fourth consecutive year

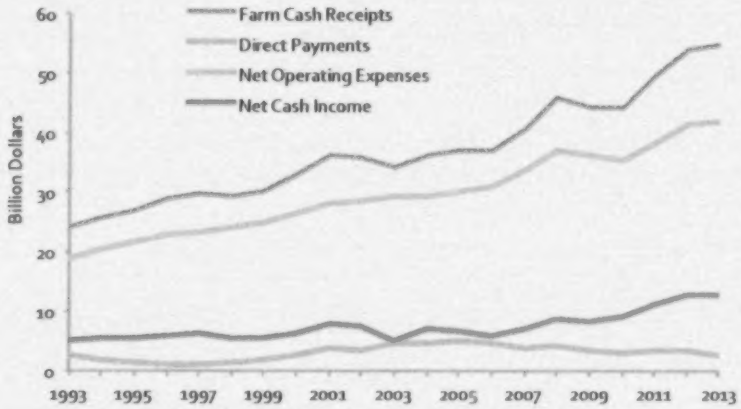
In 2013, growth in farm cash receipts outpaced growth in farm operating expenses, pushing net cash income to $12.7 billion—26.5% above the 2008-2012 average.

Farm cash receipts, which include market receipts and direct program payments, increased only slightly (2.0%) in 2013, following larger increases of 12.0% and 8.3% in 2011 and 2012 respectively.

Similarly, net operating expenses rose year-over-year by 8.4% and 8.1% in 2011 and 2012 respectively, but only increased by 1.8% in 2013. In 2013, a large decline in fertilizer expenses was offset by increases in most of the other expenses.

Direct program payments to producers include payments to help stabilize farm income and to help offset production losses. Program payments declined by 21.2% in 2013 because of increases in commodity prices which led to healthy market returns in the last few years.

Chart E.1.5
Farm Cash receipts, operating expenses and Net Cash income by commodity, 1993-2013



Source: Statistics Canada and AAFC calculations.

Farm level performance, as measured by average net operating income, has improved and varies by province

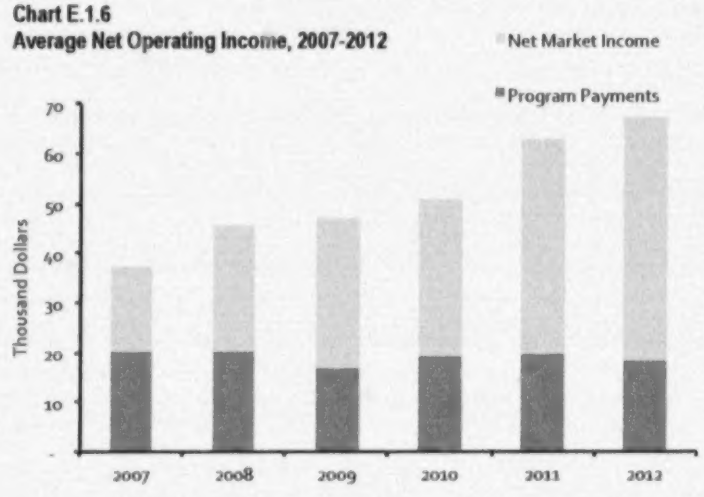
Average net operating income has increased over time, mainly due to an increase in net market income.

In 2012, the average net operating income was $67,000 per farm.

On average, almost three quarters (72.6%) of all farm operating income in 2012 came from the market—an increase from 45.2% in 2007.

The contribution of direct market receipts to total operating income was 80.0% or more in British Columbia, Ontario and Nova Scotia.

Chart E.1.6
Average Net Operating Income, 2007-2012



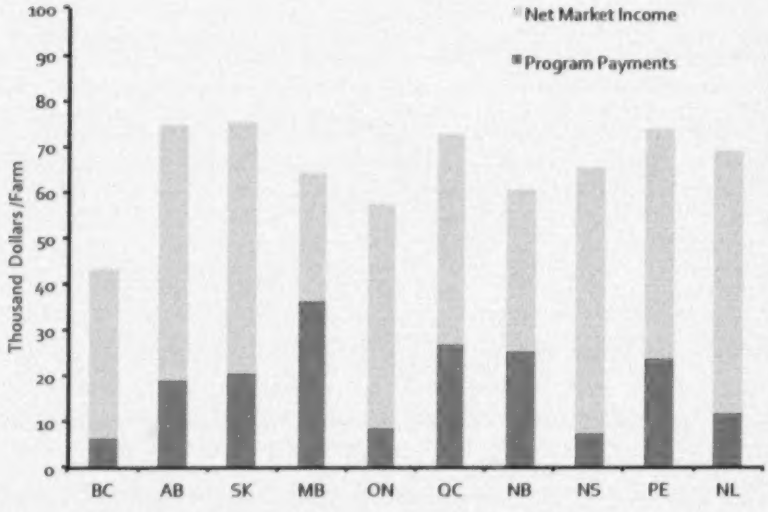
Source: Statistics Canada, Taxation Data Program
Note: Estimates presented cover both unincorporated farms and communal farming organizations with total farm operating revenues equal to or greater than $10,000, as well as incorporated farms with total farm operating revenues of $25,000 and over.

In 2012, Saskatchewan had the highest average net operating income per farm, followed by Alberta and Quebec.

British Columbia was the province with the lowest average net operating income.

The need for program payments also varied by province, due in part to differences in farm support programming across provinces. In 2012, British Columbia farmers received the lowest program payment per farm, while Manitoba farmers received the highest.

Chart E.1.7
Average Net Operating Income of Farms, 2012



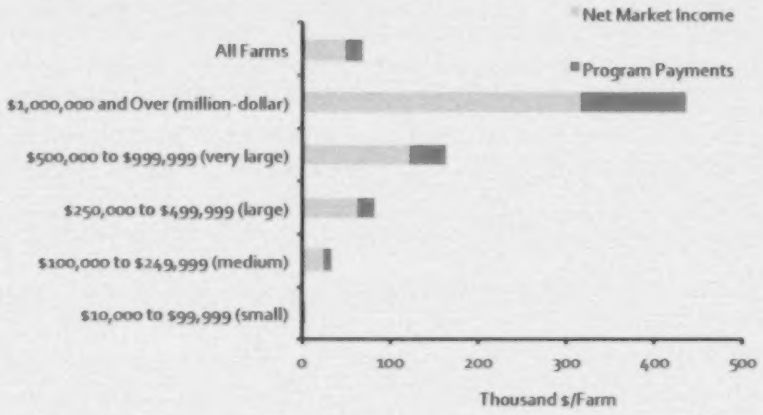
Source: Statistics Canada, Taxation Data Program
Note: Estimates presented cover both unincorporated farms and communal farming organizations with total farm operating revenues equal to or greater than $10,000, as well as incorporated farms with total farm operating revenues of $25,000 and over.

The average net operating income varies by farm size.

The average net operating income per farm ranged from $2,700 among small farms to $433,000 among million-dollar-plus farms.

About 73.0% of operating income for the largest farms came from the market, with the remainder coming from program payments. Market income was also the predominant source of income for all farms.

Chart E.1.8
Average Net Operating Income by Revenue Class, 2012



Source: Statistics Canada, Taxation Data Program
Note: Estimates presented cover both unincorporated farms and communal farming organizations with total farm operating revenues equal to or greater than $10,000, as well as incorporated farms with total farm operating revenues of $25,000 and over.

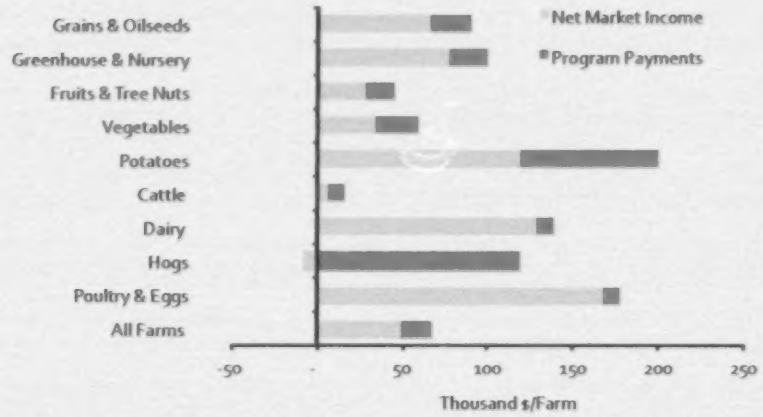
Average net operating income also varies by farm type due mostly to differences in prices, farm size and market conditions that take place on a year to year basis.

Potato, poultry and egg, and dairy farms reported the highest average net operating incomes in 2012.

Cattle farms, and fruit and tree nut farms reported the lowest average net operating incomes.

Hog farms, continued to struggle in 2012, earning a negative net market income. Hog farmers' losses, however, were offset by significant program payments.

Chart E.1.9
Average Net Operating Income by Farm Type, 2012



Source: Statistics Canada, Taxation Data Program
Note: Estimates presented cover both unincorporated farms and communal farming organizations with total farm operating revenues equal to or greater than $10,000, as well as incorporated farms with total farm operating revenues of $25,000 and over.

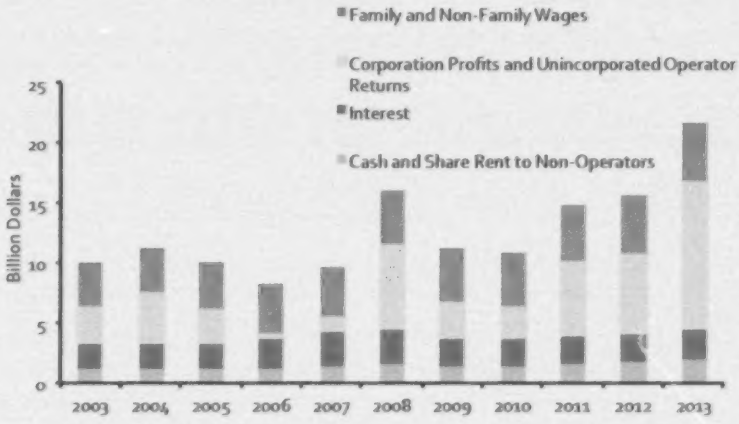
Net value added in agriculture reached a record high in 2013

In 2013, net value added in agriculture reached $21.7 billion — 58.6% higher than the 2008-2012 average, and 36.0% above the previous record high in 2008.

Agriculture net value added provides an annual measure of the value of income generated from the production of agricultural goods and services beyond direct financial profits to producers. An important component of this account is the total value of production, which represents the value of the farm sector's gross output occurring within the calendar year.

In 2013, the returns to all factors of production were higher than the 2008-2012 average, including the cash and share rent to non-operators 20.4%, and corporation profits and unincorporated operator returns 138.4%.

Chart E.1.10
Net Value Added in Agriculture, 2003-2013



Source: Statistics Canada and AAFC calculations.
Note: Starting in 2005, changes were made to the net value added methodology so that resales are no longer included in agricultural sales to other farms or in expenses on inputs from other farms.

Canadian farm share of the food dollar has decreased marginally over time and varies by commodity

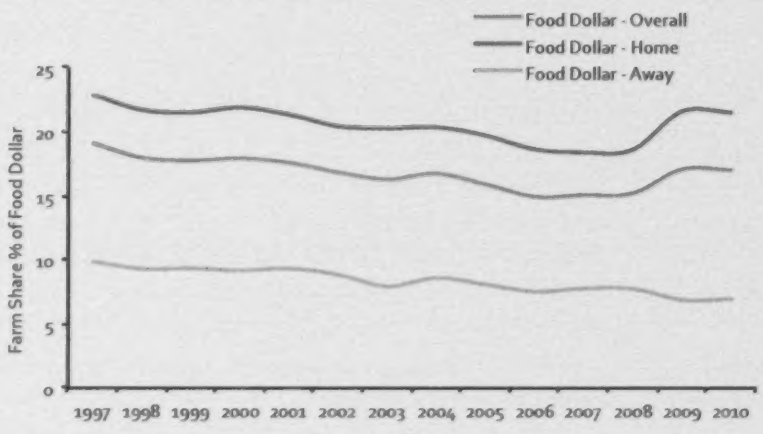
Farm share of food expenditures has decreased over time as consumers are demanding and buying more value-added food products.

Between 1997 and 2010, overall farm share for total food expenditures decreased from 19.0 % to 17.0 %

The farm share is the average percentage from each dollar of annual Canadian consumer food purchases received by farmers for their raw commodities.

The farm share is lower when there is more post-farm gate processing, packaging and value-adding services of food.

Chart E.1.11
Canadian Farm Share, 1997-2010



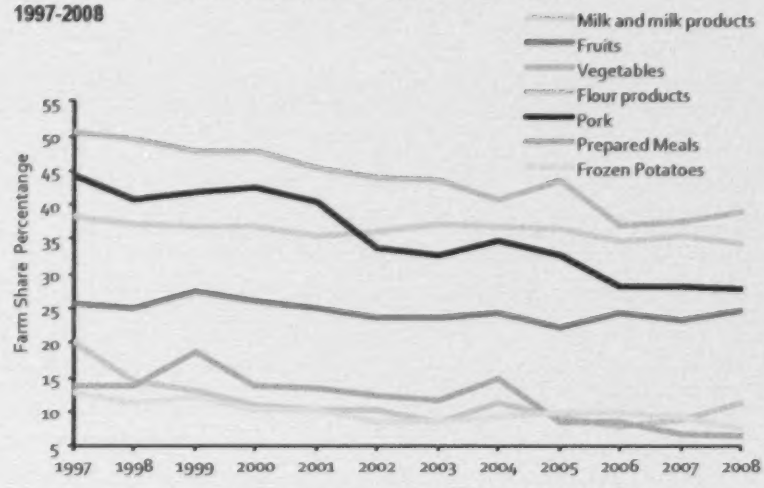
Source: Statistics Canada, AAFC, ERS and University of Guelph calculations.

Differences in farm shares are based on the degree of post-farm processing and services involved in getting the food product to consumers.

The farm share for fruits, vegetables, milk and milk products are higher because there is very little additional processing involved in these products.

The farm share for flour products, frozen potatoes and prepared meals are low because there is much more post-farm gate processing and services involved.

Chart E.1.12
Farm Share of At Home Food Expenditures, Selected Products, 1997-2008



Source: Statistics Canada, AAFC and University of Guelph calculations.

SECTION E2

Farm Inputs

Introduction:

Farm inputs and service suppliers also play a major role in the Canadian agriculture and agri-food system. Access to affordable inputs and services is particularly important for the profitability of the primary agriculture sector.

Agriculture producers continue to see rising operating costs, with costs increasing over the last ten years. The four fastest growing operating expenses over this period were commercial seed, fertilizer and lime, machinery fuel, and custom work.

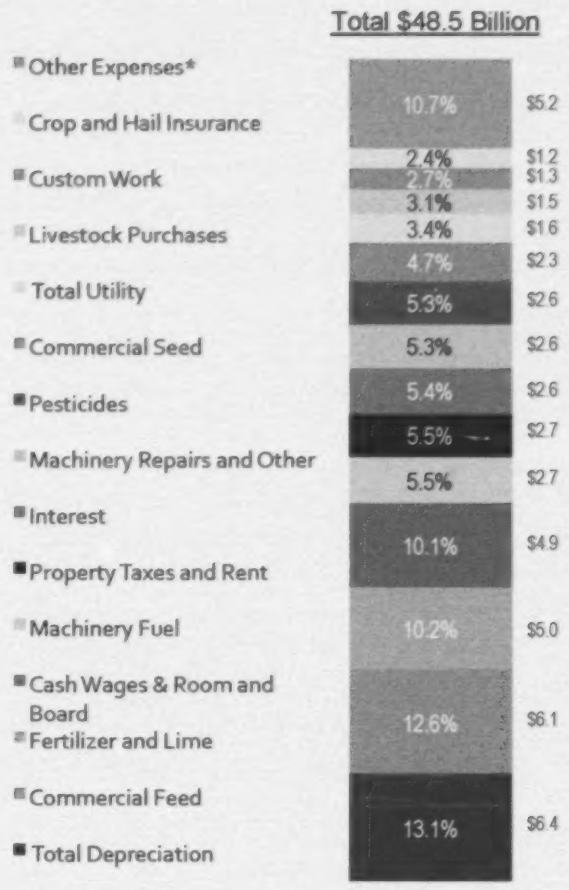
Most farm operating increased moderately in 2013 expenses

In 2013, farm net operating expenses and depreciation totalled $48.5 billion, an increase of 2.1% from the previous year.

Commercial feed was the single largest operating expense ($6.1 billion) for agricultural producers in 2013, followed by fertilizer and lime ($5.0 billion), hired labour ($4.9 billion), machinery fuel ($2.7 billion), property taxes and rent ($2.7 billion), and interest ($2.6 billion).

Total depreciation reached $6.4 billion in 2013, an increase of 4.1% over 2012. As farms become more capital intensive, depreciation gradually increases.

Chart E.2.1
Farm Net Operating Expenses, 2013



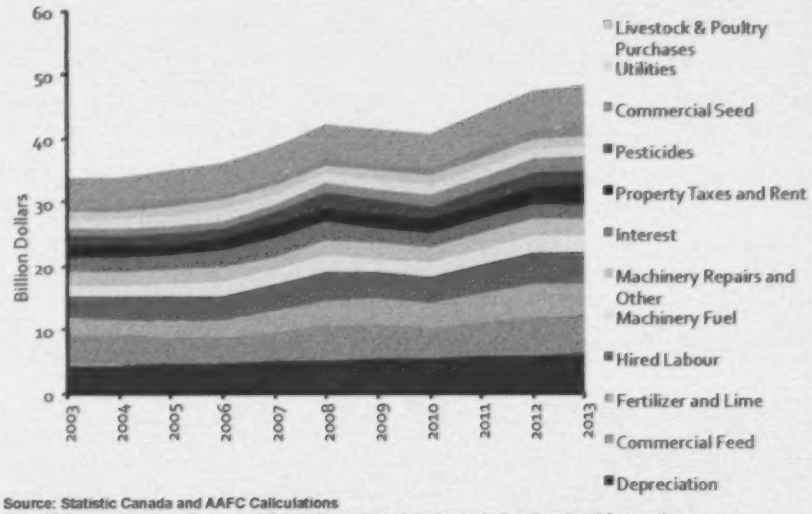
Source: Statistics Canada
Note: *Other Expenses is the sum of smaller-value categories including: Legal and Accounting Fees, Repairs to Buildings and Fences, Irrigation, Twine, Wire and Containers, Artificial Insemenation (A. I.) Fees & Veterinary, Business Insurance, and Stabilization Premiums

Farm operating expenses continued their upward trend over the past decade

Producers saw their overall operating costs increase by 43.4% between 2003 and 2013.

The expense that increased the most by 105.8% between 2003 and 2013, was commercial seed. Fertilizer and lime, and machinery fuel increased by 101.6% and 79.7%, respectively, over the same period.

Chart E.2.2
Farm Net Operating Expenses and Depreciation, 2003 to 2013



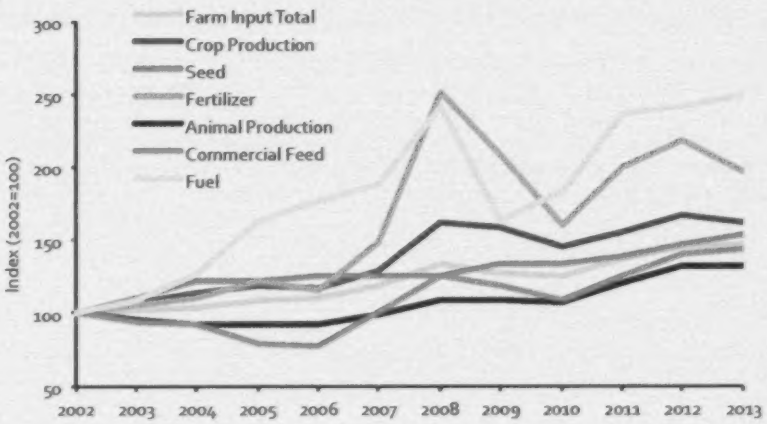
Source: Statistic Canada and AAFC Calculations
Note: *Other expenses are the sum of the smaller-value categories including: Legal and Accounting Fees, Repairs to Buildings and Fences, Irrigation, Twine, Wire and Container, Crop and Hail Insurance, A.I. fees & Veterinary, Business Insurance, Stabilization Premiums.

Higher prices for a number of key inputs were offset by lower prices for other inputs.

Prices of all major inputs, such as commercial seed, machinery fuel and farm labour, continued to increase in 2013.

Fertilizer prices declined in 2013 due to global oversupply and stagnant demand from the crop sector.

Chart E.2.3
Farm Input Price Index, 2002-2013



Source: Statistics Canada.

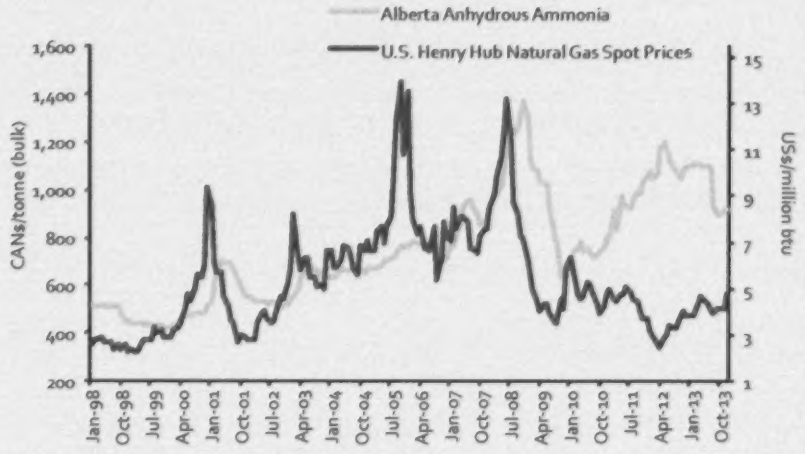
Changes in fertilizer prices and land values have implications for farm operating expenses

Historically, the price of fertilizer has followed the price of natural gas, but this trend has changed.

Fertilizer prices have been more tied to international demand and supply factors than to natural gas prices in recent years.

Ammonia prices have generally been increasing after declining to a low in 2010, whereas natural gas prices remained low—a result of new, low-cost technology that increased the supply of natural gas extracted from shale.

Chart E.2.4
Anhydrous Ammonia and Natural Gas Spot Prices, 1998-2013



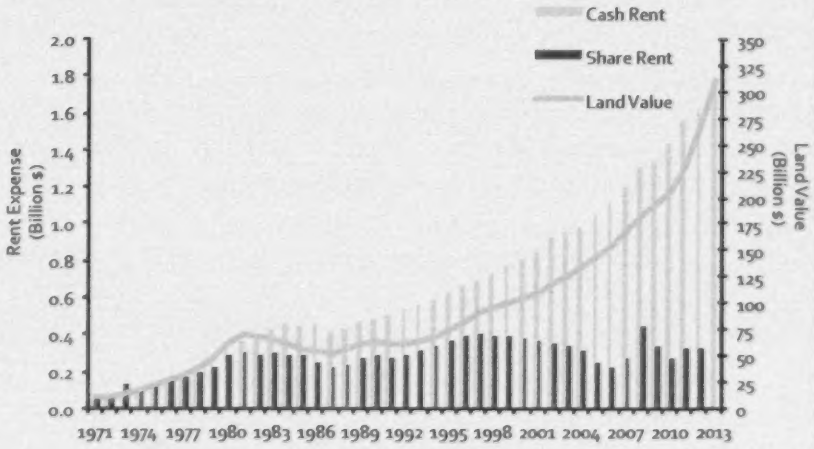
Source: Alberta Agricultural Input Monitoring System (AIMS) and the United States Energy Information Administration.

Land values rose steadily through the 2000s and into the 2010s.

Land values have increased at an average annual rate of 8.2% since 1971 to reach $310.8 billion in 2013.

While cash rent and land values have trended upward together, the value of share rent has experienced a relative decline.

Chart E.2.5
Total Rent and Farmland Value, 1971-2013



Source: Statistics Canada and AAFC calculations.

Notes:
Cash rent usually involves a per-acre arrangement between the landowner and the farmer, and are often set for a multi-year period. The same rent is paid regardless of what the output of the land is.

Share rent, or share-cropping, involves the landowner and renter sharing in the inputs and outputs of the land. A percentage to be shared is agreed upon between the two parties. The rent paid depends on production decisions made by the two parties and the output of the crop produced on the land.

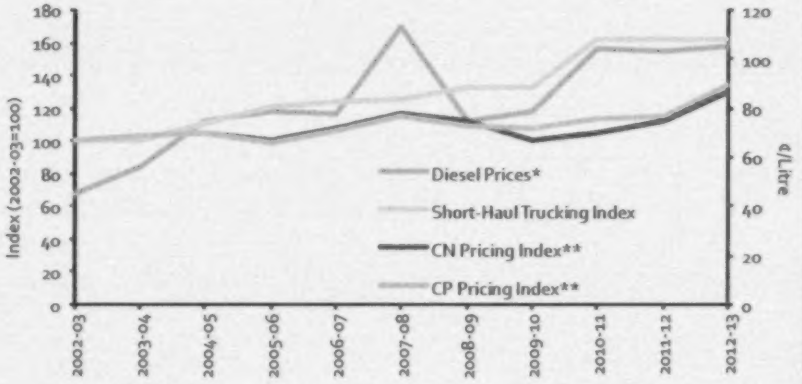
Transportation costs a key component of farm operating expenses, have increased for rail but moderated for trucking in Western Canada

The cost of shipping grain in Western Canada by rail has increased in recent years while short-haul trucking rates have stabilized.

In 2012-2013, short-haul trucking rates remained relatively unchanged from those of 2011 and 2012. This may be due to the modest increase in diesel prices during the period 2011-2013.

Rail rates increased in 2013 between 15.0% - 17.0% and short-haul trucking rates has remained unchanged.

Chart E.2.6
Rail and Trucking Rate Index, Western Canada, 2002-03 to 2012-13



Source: Quroum Corporation, various grain companies, and the Farm Input Price Survey, AAFC.

SECTION E3

Agricultural Greenhouse Gas Emissions

Introduction:

Agricultural activities produce greenhouse gas (GHG) emissions largely from biological processes inherent to animal and plant production. Agriculture can be both a source and a sink of GHGs. The main GHGs emitted from agriculture are nitrous oxide (N_2O) and methane (CH_4), while carbon dioxide (CO_2) can be either emitted or absorbed by agricultural soils.

Agriculture is responsible for about 8.4% of the GHG emissions nationwide. Over the last 10-15 years, changes in Canada's agricultural GHG emissions show a relatively stable trend when considering all sources of emissions.

Given the increasing national and international demand for agricultural products due to an increasing global population, it is important to look at not only emission levels, but also the GHG emission intensity which reflects progress made towards enhancing the efficiency of agricultural production.

Canada's agriculture sector has seen its absolute emissions and emission intensity decline in the last two decades

Over the 1990-2011 period, the changes in Canada's agricultural GHG emissions show a relatively stable trend when considering all sources of emissions.

Canada has pledged under the Copenhagen Accord to reduce emissions from greenhouse gases (GHGs) by 17.0% below 2005 levels by 2020.

Absolute GHGs emissions from the agriculture sector in Canada declined by 8.1% (5.73 MT) over the 1990-2011 period, when emissions and removals from crop production, livestock production, agricultural land use and on-farm energy use are all accounted for.

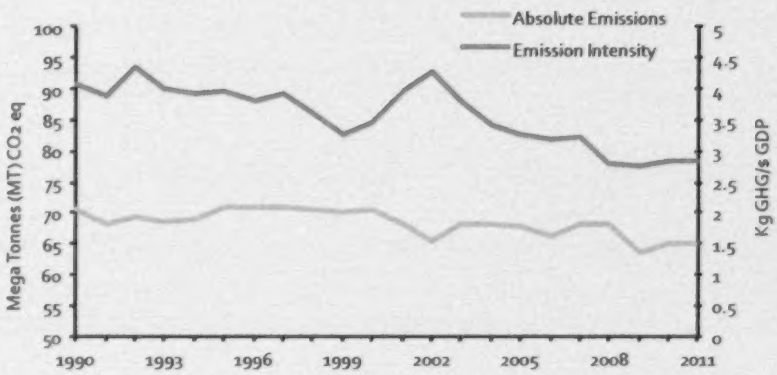
Emission intensity, as measured by the amount of GHGs emitted per unit of economic activity ($ GDP), decreased more dramatically during the same period from 4.08 to 2.83 kg CO_2 equivalent for every $1 of Agricultural GDP, a decline of 30.6%. This shows enhanced efficiency of agricultural production.

Agriculture was responsible for 8% of national GHG emissions in 2011.

Canada's total GHG emissions were 701 Mt CO_2 equivalent, not including soil CO_2 exchange. Approximately 82.0% of these emissions originated from the energy sector. About 3.0% of these emissions were associated with on-farm energy use.

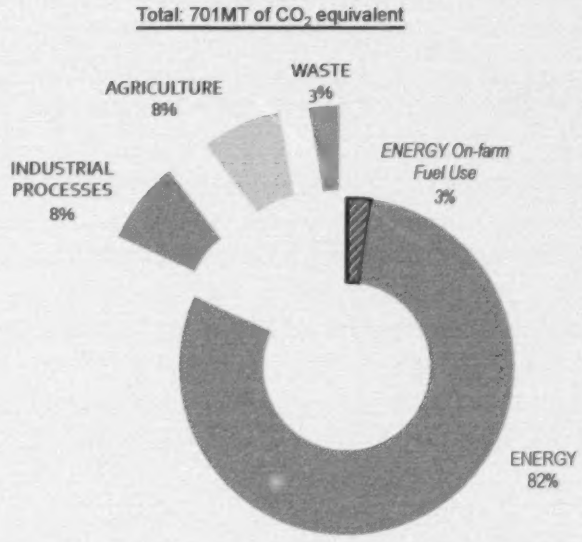
Carbon dioxide is emitted from the manufacture of fertilizers and machinery used in agriculture. These indirect emissions of CO_2 are typically reported by the manufacturing sectors and are not included in the agricultural emissions.

Chart E.3.1
Emissions and Emission Intensity of the Agriculture Sector 1990-2011



Source: Environment Canada, National Inventory Report 2014; Natural Resources Canada, National Energy Database, 1990-2011.

Chart E.3.2
A breakdown of Canada's GHG emissions in 2011



Source: Environment Canada, National Inventory Report 2014

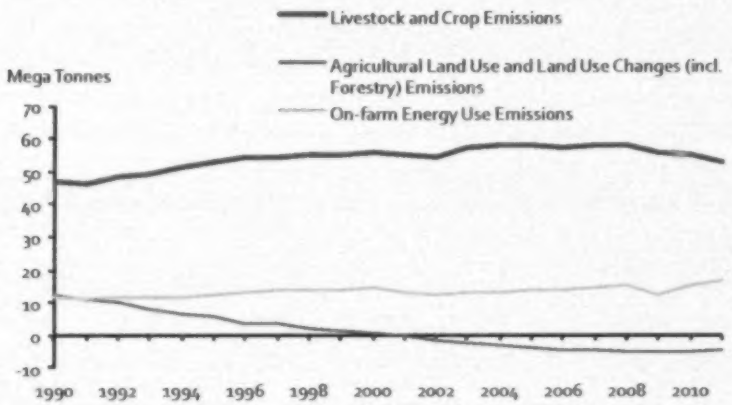
While emissions from agricultural production remain constant, major gains have been made on emissions from land use

Reductions in GHG emissions from land use (-17 MT) over the 1990 to 2011 period were partially offset by the increase in emissions from livestock & crop production (+6 MT) and the on-farm energy use (+5 MT) during the same period.

The main drivers of the upward trend in GHG emissions from livestock and crops were the expansion of beef cattle and swine populations, and increases in the application of synthetic fertilizers in the Prairies.

The land use component involves both GHG emissions and removals from the atmosphere. Important changes have occurred during the past 20 years in land management practices that have reduced emissions and enhanced soil carbon sequestration, offsetting much of the other increases from crop and livestock production.

Chart E.3.3
Emission Trends by Category, 1990-2011



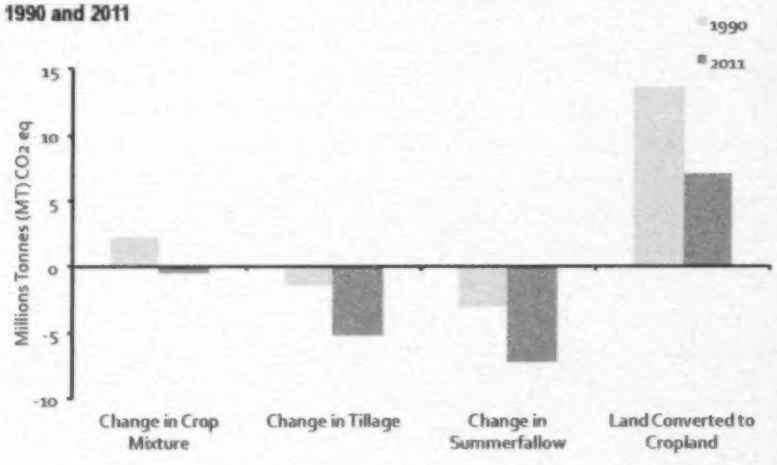
Source: Environment Canada, National Inventory Report 2014 and Natural Resources Canada, National Energy Database, 1990-2011.

Changes in the crop mix, reduced use of summerfallow, tillage practices and the decline in the area of land converted to cropland explain the decrease (-17 MT) of net GHG emissions from agricultural land use in the crop sector.

During the 1991-2011 period, the area of summerfallow declined by 74.0% while the area under no-till and reduced tillage increased by 165%.

Over the same period, there was an increase in perennial crops and a decline in land converted to cropland.

Chart E.3.4
Emissions and Removals Associated with Land Management Changes, 1990 and 2011



Source: Environment Canada, National Inventory Report 2014.

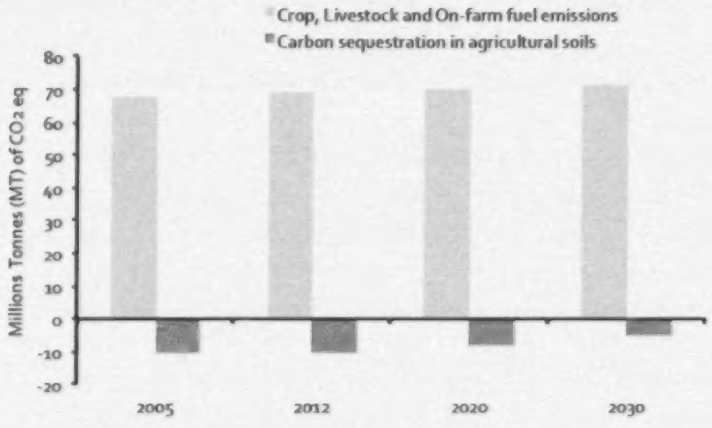
Future agricultural emissions are expected to remain fairly constant

Estimates of future agricultural emissions show little growth.

Combined greenhouse gas (GHG) emissions from crop, livestock and fuel use are estimated to stay fairly constant over time, increasing from 69 Mt in 2012 to 70 Mt in 2020 and 72 Mt in 2030.

It is expected that the rate of cropland soil carbon sequestration in 2020 would decline compared to 2012, from 10Mt to 8 Mt. This is a result of the soil carbon sink approaching equilibrium and limited scope for additional adoption of carbon sequestration practices such as no-till.

Chart E.3.5
Estimated GHG Emissions from Agriculture in the Future



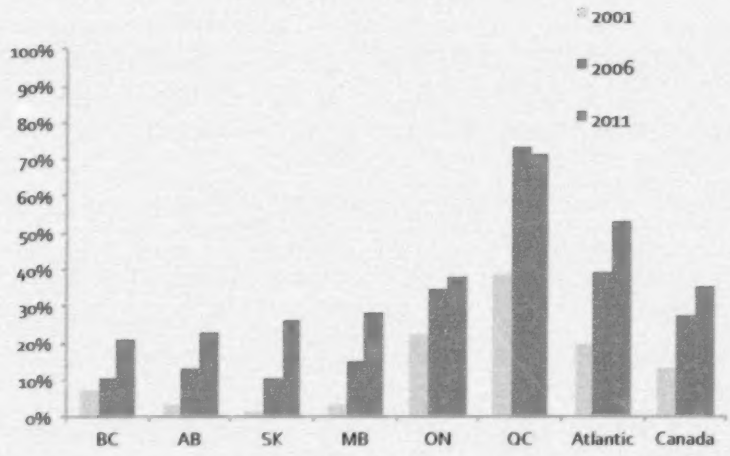
Source: Environment Canada, Canada Emissions Trends 2014.

Use of Environmental Farm Plans (EFP) continues to increase in every province, leading to an increase in the adoption of Beneficial Management Practices (BMPs)

In 2011, one out of four Prairie producers had an Environmental Farm plan (EFP), compared to only 2.7% in 2001.

While only 35% of farms have an EFP, this represents 50% of the farm land in Canada. The high rate of adoption of EFPs in the province of Quebec is due to the introduction of multiple programs since the mid-1990s.

Chart E.3.6
Percentage of Farms with an EFP, by Province



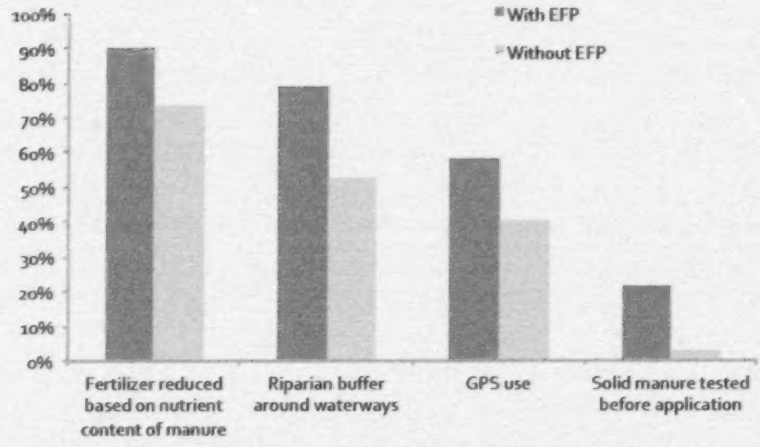
Source: AAFC (with data from Statistics Canada, Farm Environmental Management Survey 2001, 2006 & 2011)

Producers are increasingly concerned about the impact their production practices are having on the environment.

Producers with an EFP are more likely to have adopted various BMPs than those that do not. However, some BMPs are used even without EFPs.

The implementation of an EFP to encourage environmentally friendly practices translated into a significant increase in the adoption of a suite of BMPs such as reduced fertilizer applications, buffer areas around waterways, use of GPS and testing solid manure for nutrient content before application.

Chart E.3.7
Percentage of Farms Implementing BMPs, 2011



Source: AAFC (with data from Statistics Canada, Farm Environmental Management Survey 2011)

SECTION F

Agri-Food

SECTION F1

Food and Beverage Processing

Introduction

The food and beverage processing industry produces processed goods using both primary and processed products as inputs, which are then distributed to food manufacturers as input, food retailers, foodservice establishments and, ultimately, food consumers. In an effort to supply the market with products and attributes most in demand, the industry has become increasingly integrated across the supply chain, in both domestic and global markets.

The food and beverage processing industry is a significant driver of the Canadian economy, contributing $26.9 billion or 16% to total manufacturing GDP. In terms of total manufacturing employment, the industry is the largest employer, providing nearly 17% of jobs.

However, the industry continues to face significant challenges arising from commodity price volatility, tight labour market increases in input costs, competition and structural changes, including the entrance of new retailers, the expansion of existing ones, as well as the closure of some processing plants.

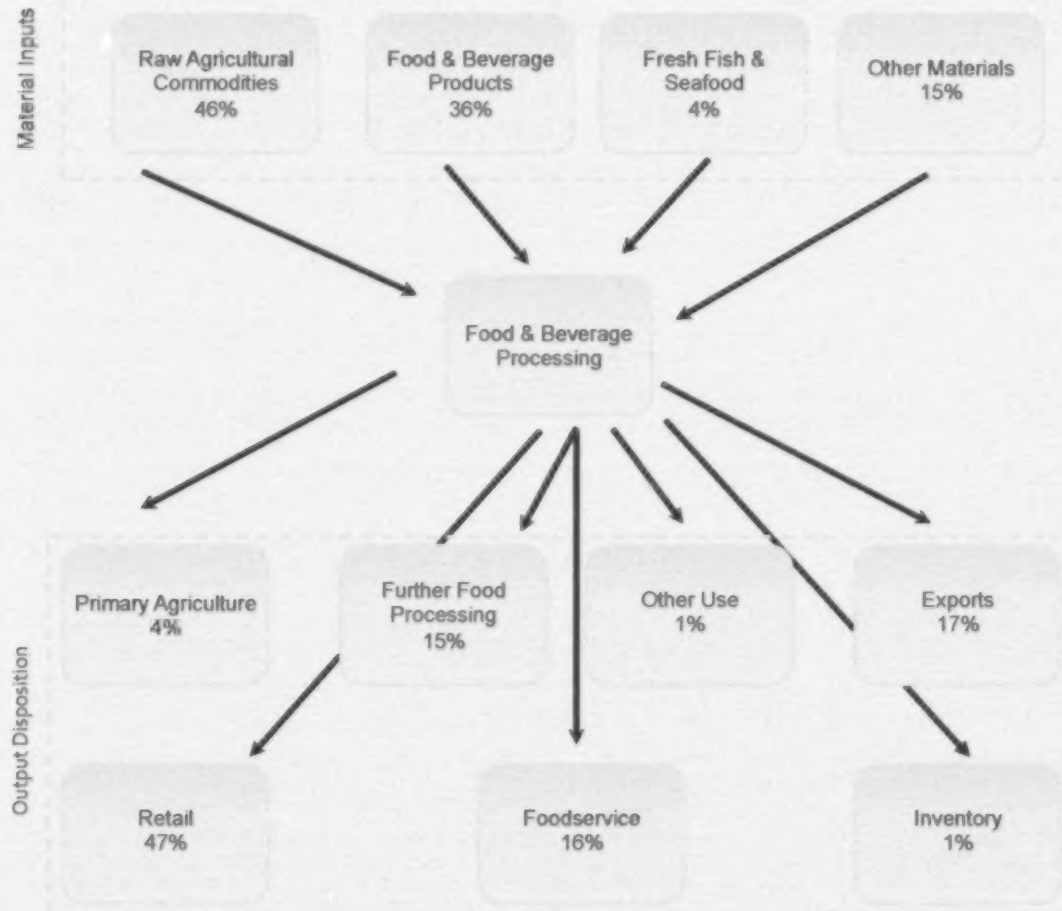
The food and beverage processing industry is an important component of the agriculture and agri-food system; transforming agricultural commodities into value added products that are sold in Canada and abroad

Raw agricultural commodities accounted for about 46.0% of the total value of material inputs used by the Canadian food and beverage processing industry in 2010.

Processed inputs from the food and beverage processing industry made up 36.0% of the total value of all material inputs, while fresh fish and seafood accounted for another 4.0%. The remaining 15.0% came from other materials, such as packaging materials, energy, chemical additives and ingredients.

Nearly half (47.0%) of the total sales of processed food and beverage products in 2010 went to Canadian food retailers. Another 17.0% was exported to foreign markets; 16.0% went to domestic food service providers; and 15.0% to other food processors for further processing, 4.0% went to the primary agriculture sector and 1.0% went to other industries within the AAFS.

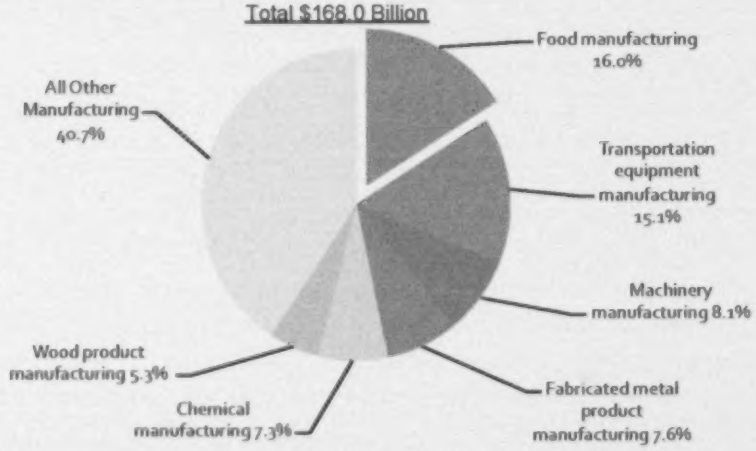
Chart F.1.1
Food Processing Input Composition and Output Disposition, 2010



The food and beverage processing industry in 2013 accounted for the largest share 16.0% of the $168.0 billion in total manufacturing sector GDP.

With a GDP of $26.9 billion, the food and beverage processing industry accounted for 16.0% of the total manufacturing sector GDP, surpassing the transportation equipment manufacturing industry, whose GDP was $25.4 billion and represented 15.1%.

Chart F.1.2
Distribution of Total Manufacturing GDP by Industry, 2013

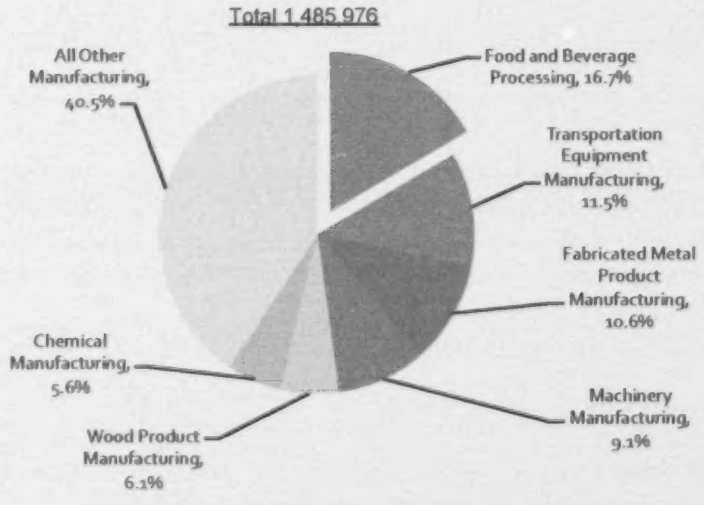


Source: Statistics Canada and AAFC calculations
Notes: 2013 data are preliminary. Due to rounding, figures may not exactly. Data were rebased (2007$) in 2013 and cannot be compared to those previous editions of this report.

Based on its share of jobs in the Canadian manufacturing sector (nearly 1.5 million employees), the food and beverage processing industry ranked first, ahead of the transportation equipment manufacturing industry.

The food and beverage processing industry employed 247,996 people in 2013 and accounted for 16.7% of total manufacturing sector employment.

Chart F.1.3
Distribution of Total Manufacturing Employment by Industry, 2013

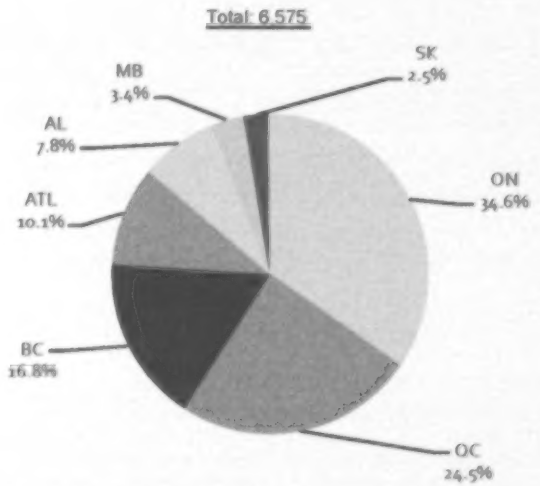


Source: Statistics Canada and AAFC calculations

More than half of all Canadian food and beverage establishments were located in Ontario (34.6%) and Quebec (24.5%).

A large number of these establishments in Ontario and Quebec were bakeries, and meat product processors. Other provinces/ regions with a significant number of food processing operations included British Columbia (16.8%), the Atlantic regions (10.1%) and Alberta (7.8%).

Chart F.1.4
Distribution of Food and Beverage Processing Establishments by Province, 2013



Source: Statistics Canada and AAFC calculations

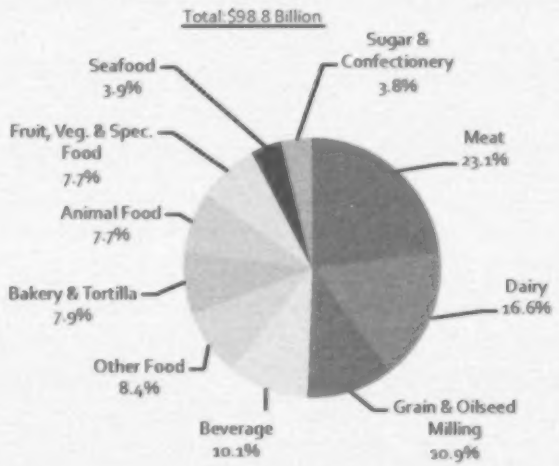
The food and beverage processing industry produces a wide variety of products, and shipments have steadily increased in value.

Collectively, meat, dairy, and grains and oilseed milling accounted for more than half of the total value ($98.8 billion) of shipments by the food and beverage processing industry in 2013.

Shipments of meat products alone accounted for almost one-quarter (23.1%), while shipments of dairy products and grains and oilseed milling accounted for 16.6% and 10.9%, respectively.

Shipments by the beverage processing industry were also significant, representing a share of 10.1% of total food and beverage product shipments.

Chart F.1.5
Distribution of Food and Beverage Processing Shipments by Sub-Industry, 2013



Source: Statistics Canada and AAFC calculations
Note: Data is preliminary based on the Monthly Survey of Manufacturing.

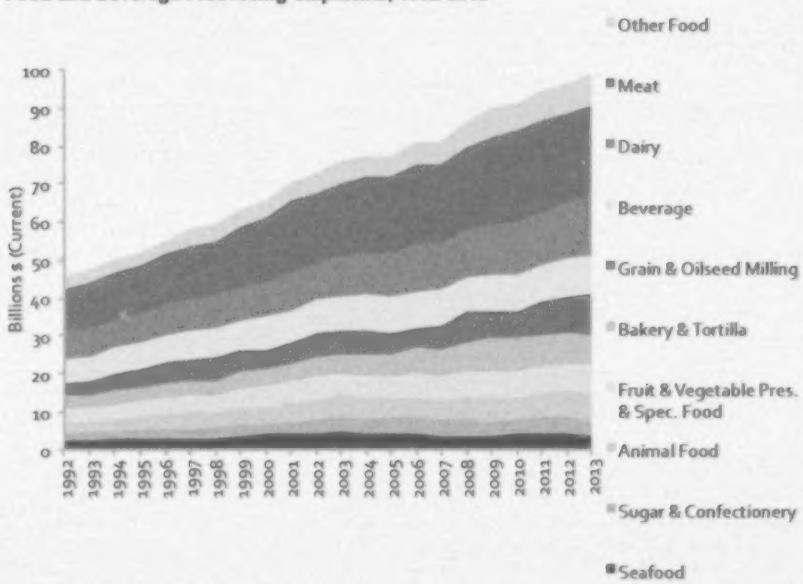
Since 1992, the value of shipments by the food and beverage processing industry has more than doubled, reaching $98.8 billion in 2013.

Growth in the value of shipments in the food processing industry varies by sub-industry.

The value of shipments of grain and oilseed products was over three times higher in 2013 than in 1992, showing the fastest growth among the product categories of the food and beverage processing industry.

Shipments of seafood grew at a rate of 55.0% during the same period.

Chart F.1.6
Food and Beverage Processing Shipments, 1992-2013



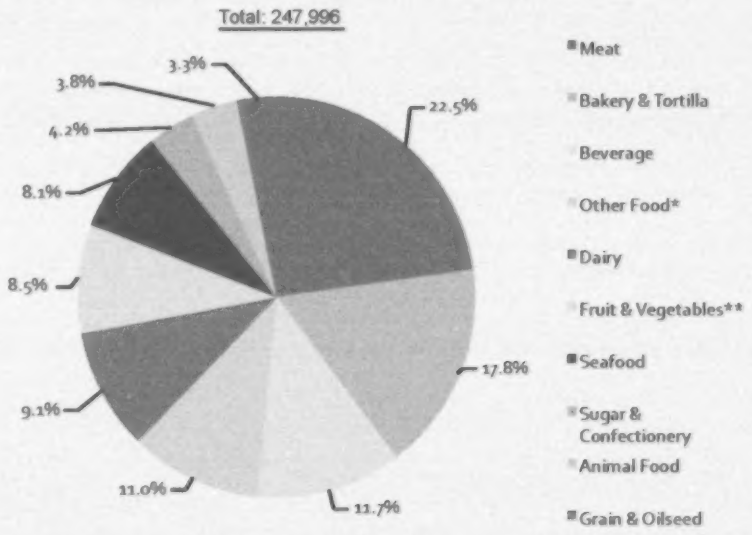
Source: Statistics Canada and AAFC calculations.
Note: The data used is derived from the Monthly Survey of Manufacturers (MSM).

Employment in the food and beverage processing industry is spread across different sub-industries

Overall half of the total food and beverage processing industry employment is accounted for by the meat, bakery and tortilla, and beverage sub-industries.

Employment in the meat processing sub-industry alone accounted for 22.5% of all the jobs in the food and beverage processing sector. The bakery and tortilla processing sub- industry followed with 17.8% of the jobs.

Chart F.1.7
Food and Beverage Processing Employment by Sub-Industry, 2013

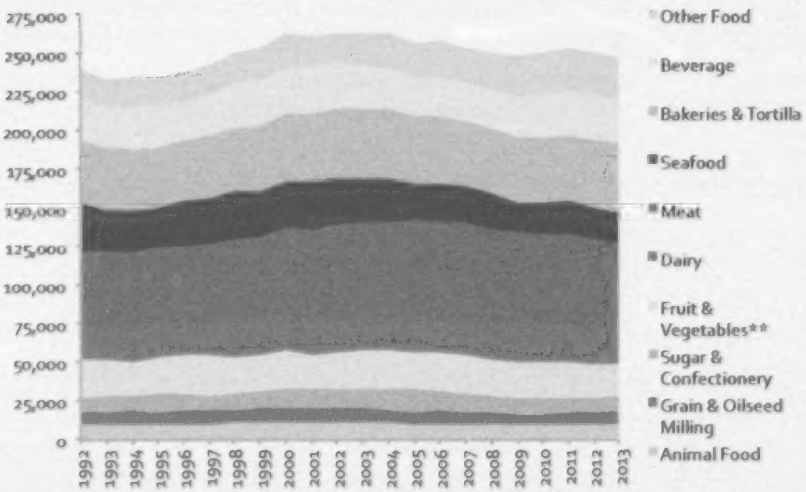


Source: Statistics Canada and AAFC calculations
Note: * Snack food, coffee and tea, flavouring syrup and concentrate, seasoning and dressing, and all other food manufacturing
** Fruit and vegetable preserving and specialty food manufacturing

Over the 1992-2013 period, employment in the food and beverage processing industry has increased by 3.7%, from 239,124 employees to 247,966. This however, is 5.9% lower than the 2002 high of 263,403

Employment in the dairy processing category has grown the most, by 13.3% over the 1992-2013 period, whereas employment in the seafood processing industry has experienced the greatest decline, by 36.3%, over the same period.

Chart F.1.8
Food and Beverage Employment by Sub-Industry, 1992-2013



Source: Statistics Canada
*Snack food, coffee and tea, flavouring syrup and concentrate, seasoning and dressing
**Fruit and vegetables and specialty food manufacturing

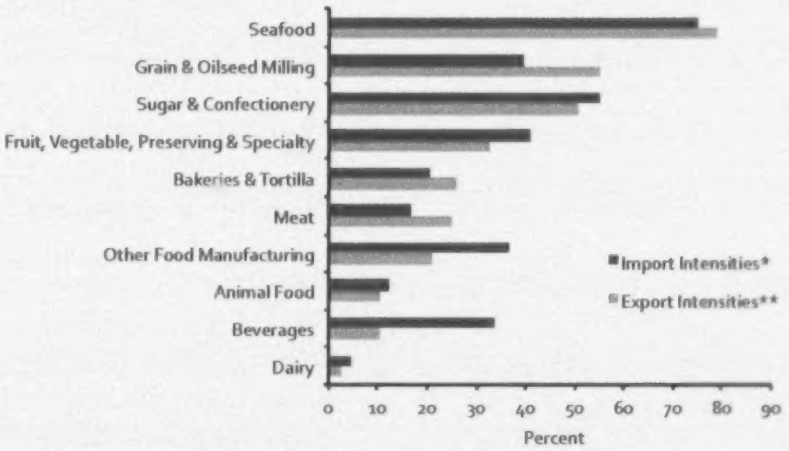
On average, exports accounted for about one-quarter of the value of food and beverage processing shipments in 2013.

Food and beverage processing imports accounted for one-quarter of the value of sales in the domestic market.

Export intensity measures the relative importance of exports to an industry's overall sales. Import intensity measures the share of imports in the overall value of sales from both foreign and domestic sources within the domestic market.

Seafood processing and grain and oilseed milling were more export oriented than most other food and beverage processing sub-industries. Seafood processing is also the most import intensive sub-industry.

Chart F.1.9
Food and Beverage Processing Import & Export Intensities, by Sub-Industries, 2013

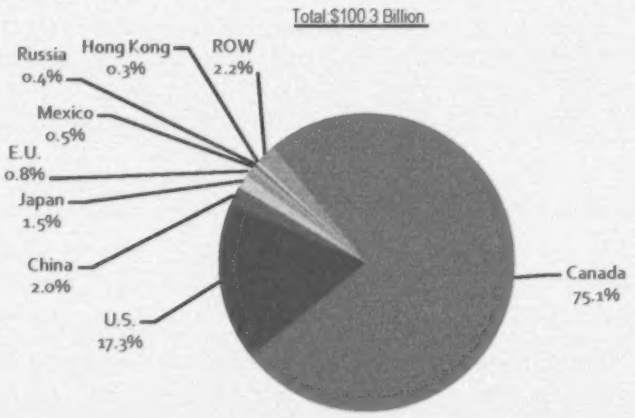


Source: Statistics Canada and AAFC calculations
Note:* Calculated as imports/(shipments-exports+imports).
** Calculated as exports as a share of shipments.

The U.S. is the most important export market for Canadian processed food and beverage products.

In 2013, 75.1% of shipments were destined for the domestic market, while the U.S. accounted for 17.3% of total shipments. China and Japan, at 2.0% and 1.5% of shipments, respectively, were the next most important destinations for Canadian food and beverage products.

Chart F.1.10
Destinations of Food and Beverage Processing Industry Shipments, by Destination, 2013



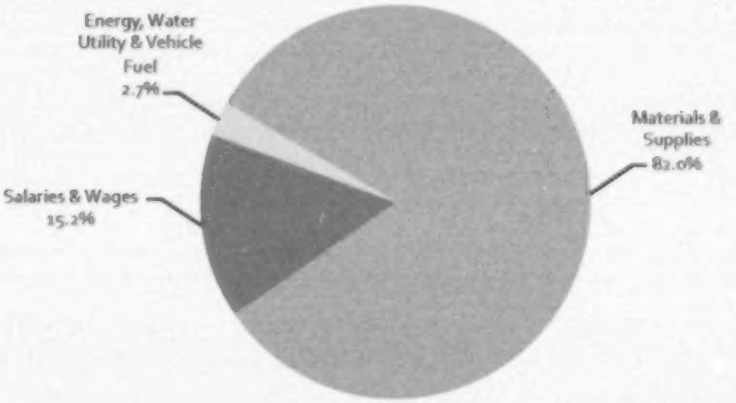
Source: Statistics Canada and AAFC calculations.

Materials and supplies were the largest variable cost in the food and beverage processing industries

Among all the variable inputs used by the food and beverage processing industry, materials and supplies were by far the largest expense, accounting for 82.0% of all variable input costs in 2012.

The cost of labour (salaries and wages) was the second-highest, representing 15.2% of the total variable input costs. Energy, water, utilities and fuel collectively accounted for another 2.7%.

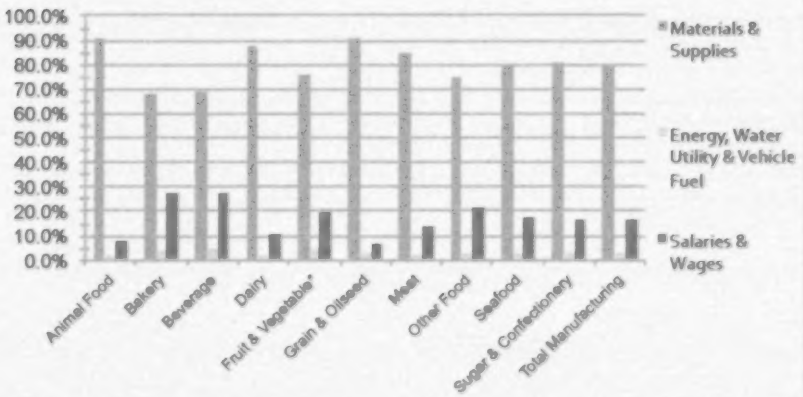
Chart F.1.11
Total Variable Input Costs in the Food and Beverage Processing Industry, 2012



The composition of the total variable input costs varied by sub-industry.

In the beverage processing industry, the cost of materials and supplies accounted for 68.0% while labour accounted for 27.1% of the total variable input cost. Collectively, energy, water, utilities and fuel accounted for almost 4.5%. In the bakery industry, the cost of material and supplies accounted for 68.4%, while labour accounted for 27.8% of the total variable input cost.

Chart F.1.12
Food and Beverage Processing Total Variable Costs, by Sub-Industry, 2013



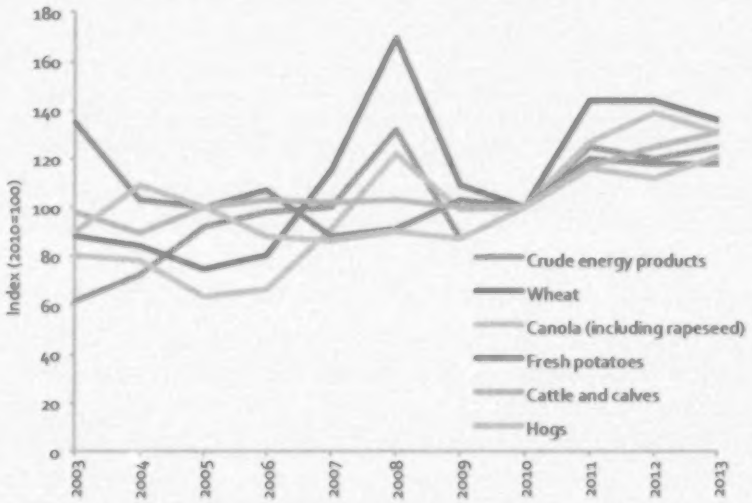
Source: Statistics Canada and AAFC calculations.
* Fruit and vegetable preserving and specialty food manufacturing
** Other food is defined as snack food , coffee and tea, flavouring syrup and concentrate, seasoning and dressing, and all other food manufacturing

Price changes of raw materials and labour have implications in the food processing industry's cost competitiveness

The cost of material inputs was affected by the price of raw materials and other inputs, such as agricultural commodities and energy, which rose sharply in 2008 and 2011.

The Raw Materials Price Index (RMPI), which measures price changes for raw materials purchased by food manufacturers in Canada fell in 2013 for wheat and canola, but increased for crude energy products, potatoes, cattle, and hogs.

Chart F.1.13
Raw Material Price Index for Selected Commodities, 2003-2013



Source: Statistics Canada and AAFC Calculations

The cost of labour, which decreased due to the economic recession of 2009, resumed its upward trend, both in the food and beverage processing industry and across the whole of the manufacturing sector.

After more than a decade of successive labour earnings gap increases between the total manufacturing sector and the food manufacturing industries, the wage earnings gap narrowed slightly over the 2002-2007 period.

During the 2008-2009 recession, average weekly wage earnings fell more dramatically in the food processing industry than in the overall manufacturing sector, but have since gradually recovered. Since the 1990s, the average weekly earnings in the food processing industry has consistently remained below those found in the overall manufacturing sector and in the beverage processing industry.

Chart F.1.14
Average Weekly Earnings in Food and Beverage Processing and Total Manufacturing, 1991-2013

Source: Statistics Canada

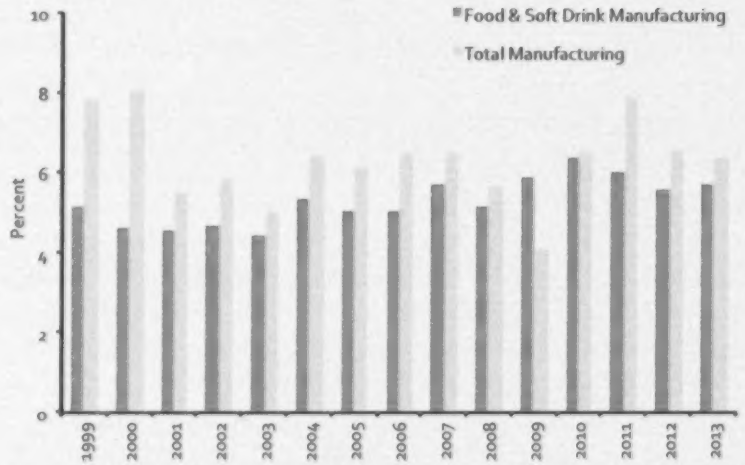
In 2013, food and beverage processors experienced lower profit margins and higher debt-to-equity ratio than other manufacturers

Profit margins in the processed food and soft drink industry improved slightly from 5.6% in 2012 to 5.7% in 2013, whereas profit margins in the overall manufacturing sector dropped from 6.6% to 6.4%.

Profit margins across most manufacturing industries have recovered from the 2009 recession.

The processed food and soft drink industry, which outperformed the rest of the manufacturing sector during the recessionary period, has also recovered.

Chart F.1.15
Profit Margins in Food and Soft Drink Processing and Total Manufacturing, 1999-2013

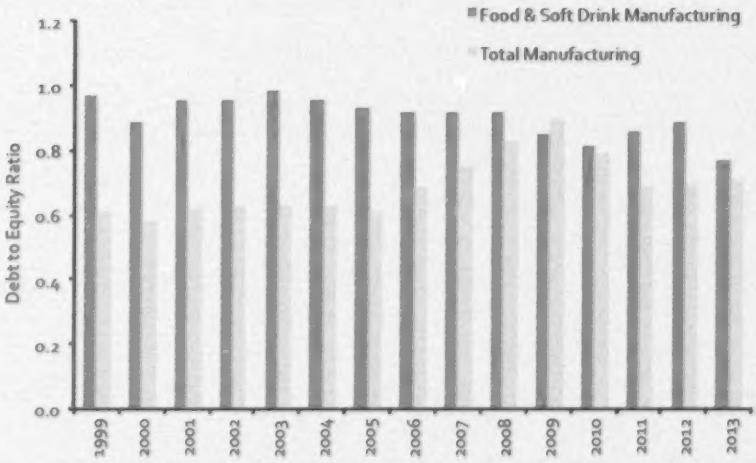


Source: Statistics Canada and AAFC calculations.

An industry's financial health is reflected in its debt-to-equity ratio. The debt-to-equity ratio of the processed food and soft drink industry dropped to a 15-year low of 0.77 in 2013.

The debt-to-equity ratio for the overall manufacturing sector in 2013 remained relatively unchanged from the previous year, at 0.71.

Chart F.1.16
Debt to Equity Ratio* in Food and Soft Drink Processing and Total Manufacturing, 1999-2013



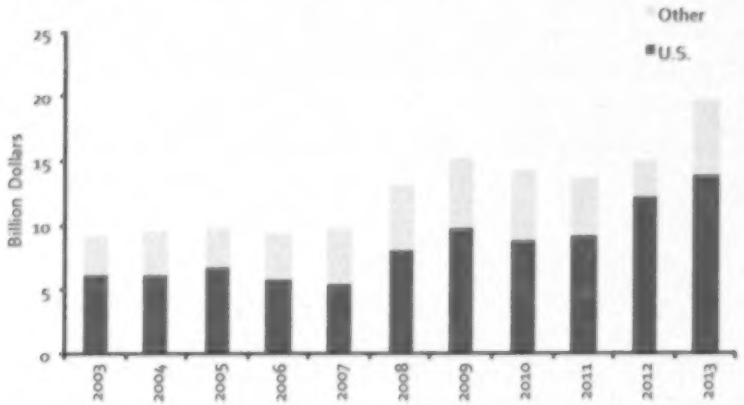
Source: Statistics Canada and AAFC calculations
Note: * See glossary for definition of the debt to equity ratio.

The stock of inward FDI in the Canadian food processing industry in 2013 totaled $19.6 billion.

The U.S. accounted for 70.6% of Canada's stock of inward FDI for food processing.

The stock of inward FDI from the U.S. rose fairly rapidly after 2007, while that from all other countries increased steadily over the 2003-2010 period, until contracting sharply in 2012. Other country FDI resumed trending up in 2013.

Chart F.1.17
Stock of Inward FDI in the Canadian Food Processing Industry, by Country of Origin, 2003-2013



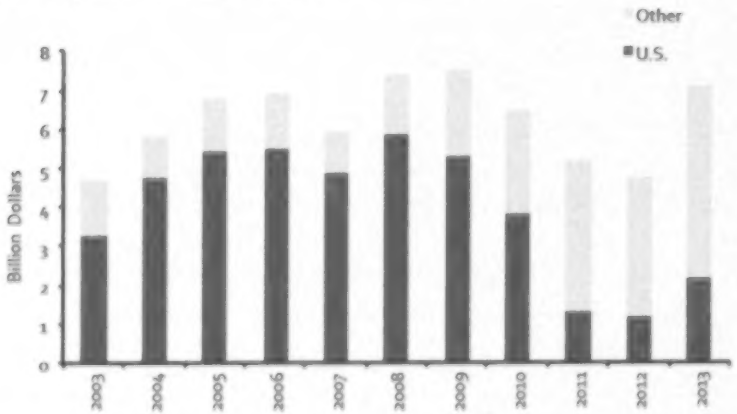
Source: Statistics Canada and AAFC calculations
Notes: Figures are estimates and subject to revisions by Statistics Canada.

Canadians have also been investing in food processing industries abroad.

Investments by Canadians in food processing industries abroad declined between 2009 and 2012, but increased in 2013.

Canadian investments in the U.S. accounted for 30.8% of the total stock of Canadian outward FDI in food processing in 2013.

Chart F.1.18
Stock of Canadian Outward FDI in Food Processing Industries, by Country of Destination, 2003-2013



Source: Statistics Canada and AAFC calculations
Note: Figures for the latest year are estimates and subject to revisions by Statistics Canada.

SECTION F2

Food Retail, Wholesale and Services

Introduction

The food retail/wholesale and foodservice industries are vital participants in Canada's agriculture and agri-food system. Food retailers are constantly adapting to new consumer demands, a highly dynamic marketplace, and new competitors. This often means restructuring to maintain or increase market share while at the same time forming alliances and networks with those upstream in the supply chain to ensure that consumer demand for food safety, quality and other product attributes are met.

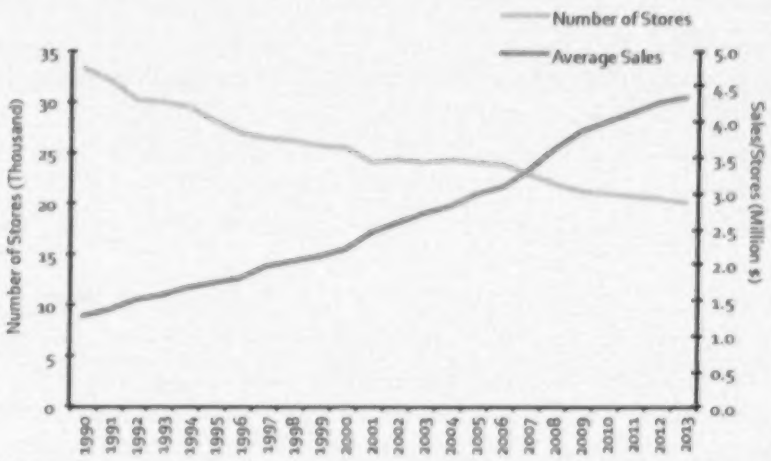
Foodservice establishments are also frequently modifying and updating their goods and services to meet changing consumer tastes and preferences. Already a fiercely competitive industry, the restaurant industry now faces increasing competition from the food retail industry, whose wide array of prepared foods and take-home meals offer the same convenience that consumers could previously only get by dining out.

Notwithstanding this increased competition, commercial foodservice sales continued to climb, and reached $54.5 billion in 2013, an increase of 3.6% over 2012 levels.

Significant store rationalization has occurred over the past two decades, with a move to larger operations.

Traditional grocery store chains have consolidated due to increased competition. In 2013, the three largest food retailers in Canada were Loblaw Companies Limited, with $32.4 billion in sales across 1,066 stores nationwide; Sobeys Incorporated, with $17.3 billion in sales across 1,569 stores nationwide; and Metro Incorporated, with $11.4 billion in sales across 566 stores in Ontario and Quebec. The consolidation trend is expected to continue as Sobey's announced the closure of 50-60 stores following the aquisition of Safeway in June 2014.

Chart F.2.1
Number of Canadian Food Stores and Average Sales, 1990-2013*



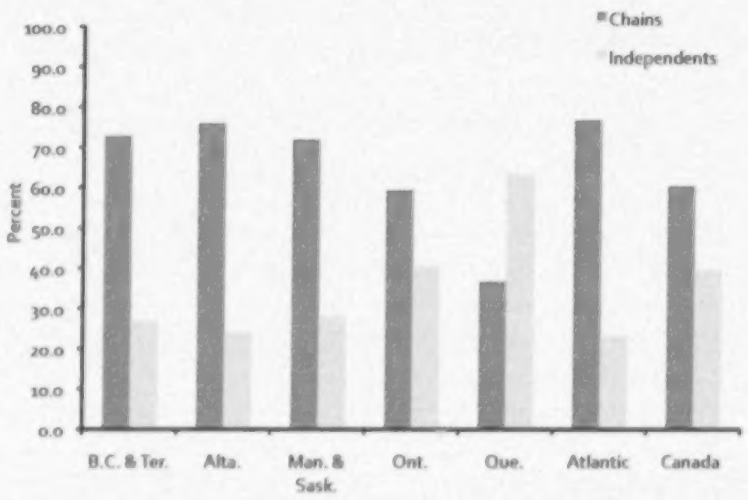
Source: Canadian Grocer, Statistics Canada and AAFC calculations.
Note: *2013 figures are estimates.

Grocery store chains dominated food store sales in all provinces except Quebec.

There are only two pan-Canadian grocery store chains—Loblaw Companies Limited and Sobeys Incorporated. Overall, 60.7% of all food store sales in Canada were made by these and other grocery store chains. The composition of the total food store sales, however, varies by province.

Overall, chains are very important in the Atlantic region 76.7% of sales and in Alberta 76.3% of sales, but much less so in Quebec 36.8% of sales. In most provinces the share of all food store sales by chains increased slightly in 2013 over the previous year with the exception of Alberta.

Chart F.2.2
Share of Canadian Food Store Sales, Chains versus Independents by Region, 2013



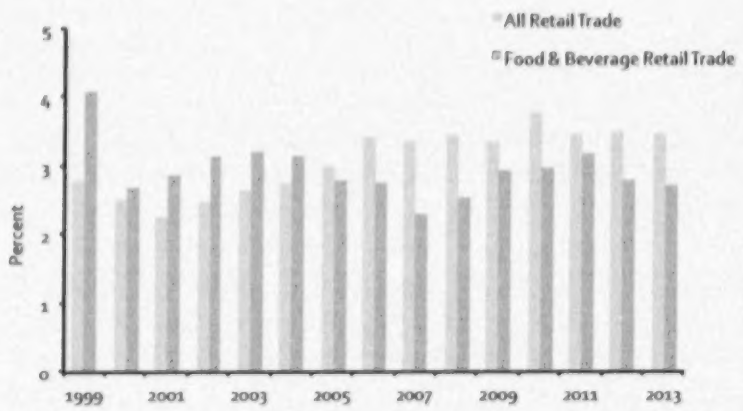
Source: Canadian Grocer Magazine, February 2014

Profit margins among food and beverage retailers decreased slightly in 2013, remaining below those of the overall retail sector

Up until 2005, the profit margins of food and beverage retailers exceeded those of other retailers. This trend has since reversed, due in part to increasing competition from traditional non-food retailers, such as Walmart and Target.

The average profit margin ratio of food and beverage retailers in 2013 was 2.7%, below the 1999-2012 average of 2.8%.

Chart F.2.3
Average Profit Margin Ratio* for Food and Beverage Retailers, 1999-2013



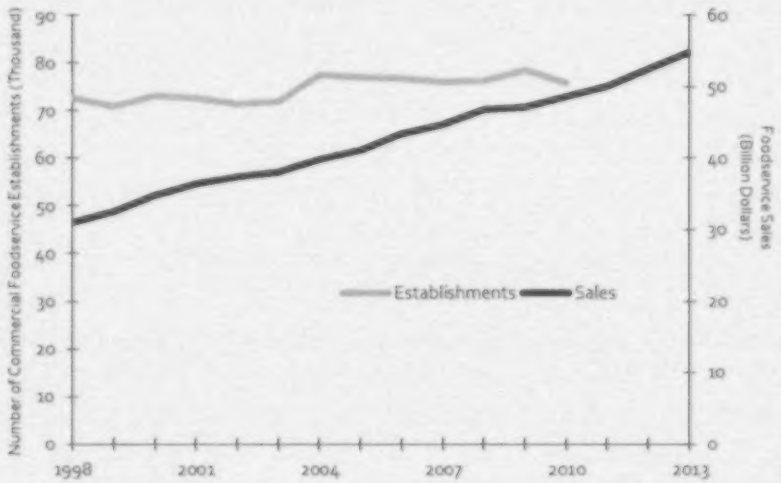
Source: Statistics Canada, Quarterly Financial Statistics for Enterprises

Note: *See Glossary for definition of the profit margin ratio and non-financial industries. Does not include government-controlled co-operatives, for example LCBO, SAQ.

Commercial foodservice sales have steadily increased over the last 15 years.

Commercial foodservice sales were valued at $54.5 billion in 2013, representing a 3.6% increase from the previous year. In 2010, there were roughly 75,900 commercial foodservice establishments in Canada, up 4.4% from 72,700 establishments in 1998.

Chart F.2.4
Commercial Foodservice Sales and Number of Establishments, 1998-2013

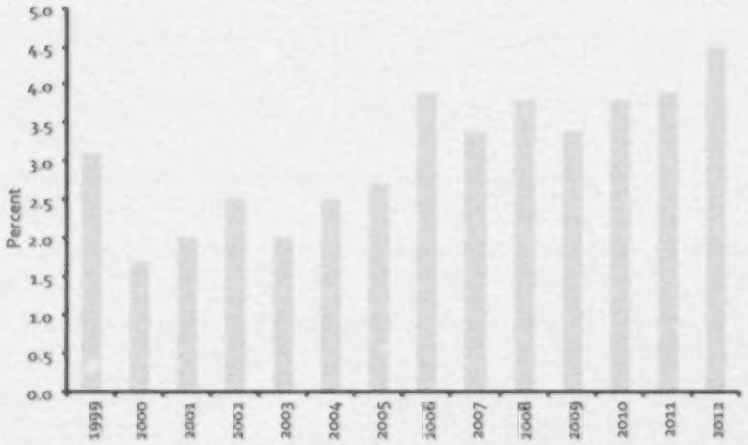


Source: Statistics Canada and Foodservice Facts 2013 - Canadian Restaurant and Foodservice Association
Note: Number of establishments data was discontinued and therefore not updated to 2013.

In 2012, profit margins among Canada's foodservice and drinking establishments continued to rise.

Profit margins among foodservice and drinking establishments have generally trended upward over the last decade, beginning at a low of 1.7% in 2000, peaking at 3.9% in 2006, and then peaking again at 4.5% in 2012.

Chart F.2.5
Profit Margins for Foodservice and Drinking Establishments, 1999-2012



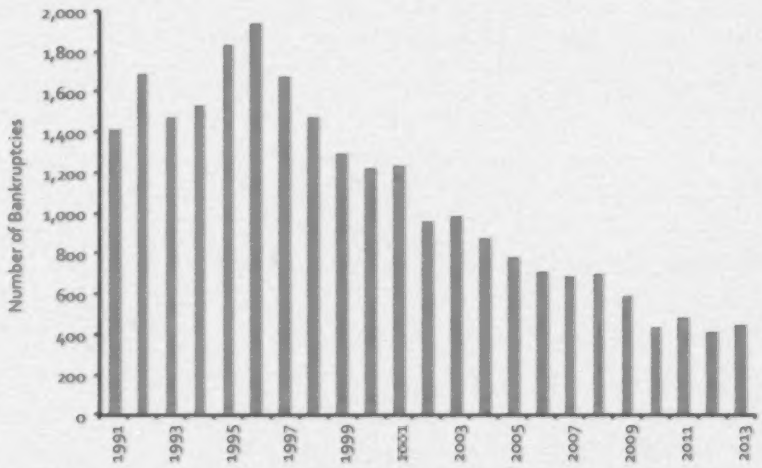
Source: Statistics Canada, Financial and Taxation Statistics for Enterprises, Annual.

Restaurant bankruptcies remain at historically low levels

Restaurant bankruptcies were up slightly in 2013 but remained historically low.

Bankruptcies fell from a high of 1,933 in 1996 to a record low of 415 in 2012. Bankruptcies increased by 6.3% in 2013 to 441, still below the 2010-2012 average of 443.

Chart F.2.6
Commercial Restaurant Bankruptcies, 1991-2013



Source: Canadian Restaurant and Foodservice Association, Quarterly InfoStats & Industry Canada Office of Superintendent

SECTION G

SECTION G

Consumers

Introduction:

Spending on food—both in stores and in restaurants—continued to rise in 2013. This was due both to an increase in the amount of food products purchased by households and to higher prices. The inflation rate of retail food prices increased and remained above the overall inflation rate.

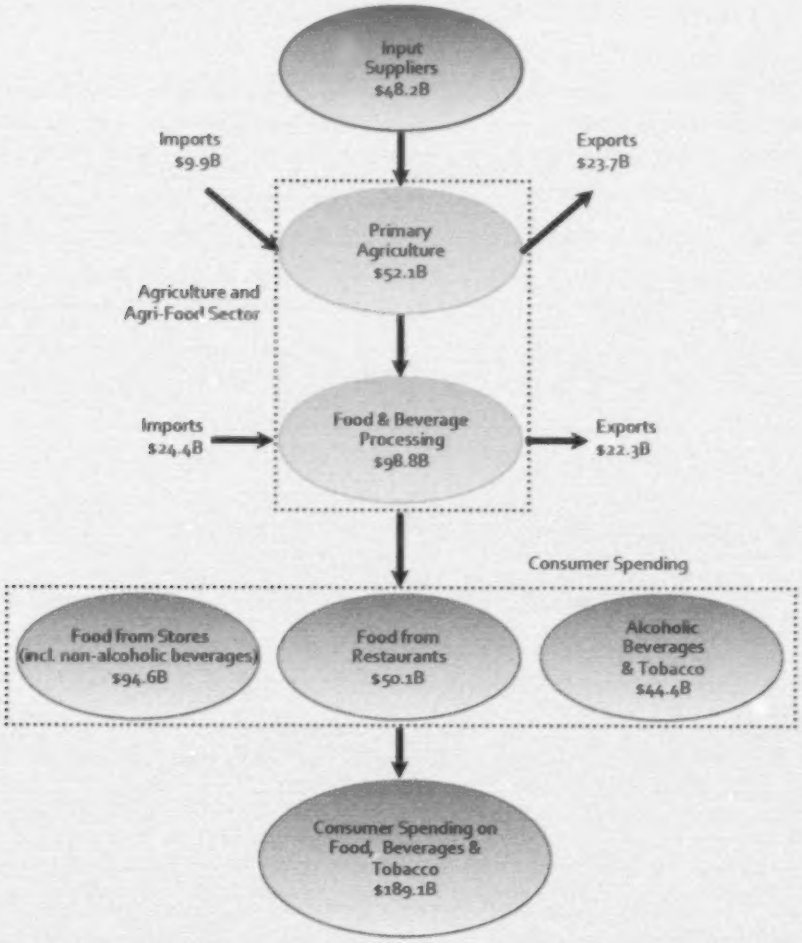
At the grocery store, Canadian consumers continued to look beyond staple foods to food products with attributes reflecting their diverse and changing preferences and values.

Canadian consumers spent $189 billion on food, beverages and tobacco in 2013

Canadian consumers benefit from a highly competitive, efficient and dynamic food system that provides them with access to a wide variety of affordable, nutritious, safe and high quality food products.

With an efficient and viable agricultural sector base, the Canadian agriculture and agri-food system produces, processes and distributes products to consumers both domestically and abroad.

Chart G.1
The Agriculture and Agri-Food System, 2013



Source: AAFC.

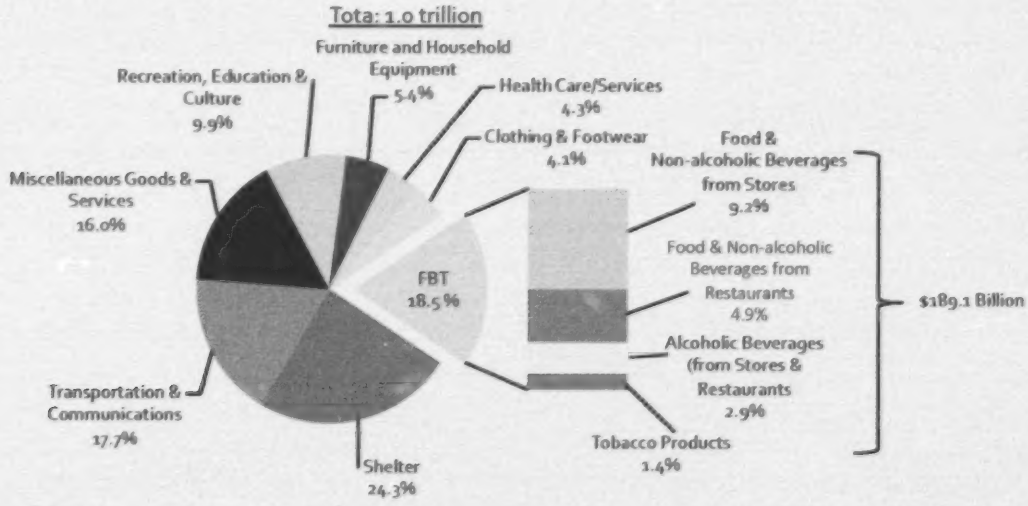
Food, beverages and tobacco (FBT) made up the second-largest household expenditure category in 2013

Canadian household spending on goods and services in 2013 came to $1.0 trillion, of which 18.5%, or $189.1 billion, was spent on food, beverages and tobacco products.

Of the total spent on goods and services, food and non-alcoholic beverages purchased at the store accounted for 9.2%, or $94.6 billion, while those purchased in restaurants accounted for 4.9%, or $50.1 billion. Spending on alcoholic beverages and tobacco products accounted for 2.9% and 1.4%, respectively, totalling $44.4 billion.

The largest household expenditure in 2013 was shelter, at $248.2 billion, representing 24.3% of all spending on goods and services. Other categories in which household expenditures represented sizeable shares included transportation and communication, with 17.7%; miscellaneous goods and services, with 16.0%; and recreation, education and culture, with 9.9%.

Chart G.2
Distribution of Household Expenditures on Goods and Services, 2013


Tota: 1.0 trillion
Furniture and Household Equipment 5.4%
Recreation, Education & Culture 9.9%
Health Care/Services 4.3%
Clothing & Footwear 4.1%
Miscellaneous Goods & Services 16.0%
Food & Non-alcoholic Beverages from Stores 9.2%
Food & Non-alcoholic Beverages from Restaurants 4.9%
FBT 18.5%
$189.1 Billion
Alcoholic Beverages (from Stores & Restaurants 2.9%
Transportation & Communications 17.7%
Tobacco Products 1.4%
Shelter 24.3%

Source: Statistics Canada custom tabulation and AAFC calculations.

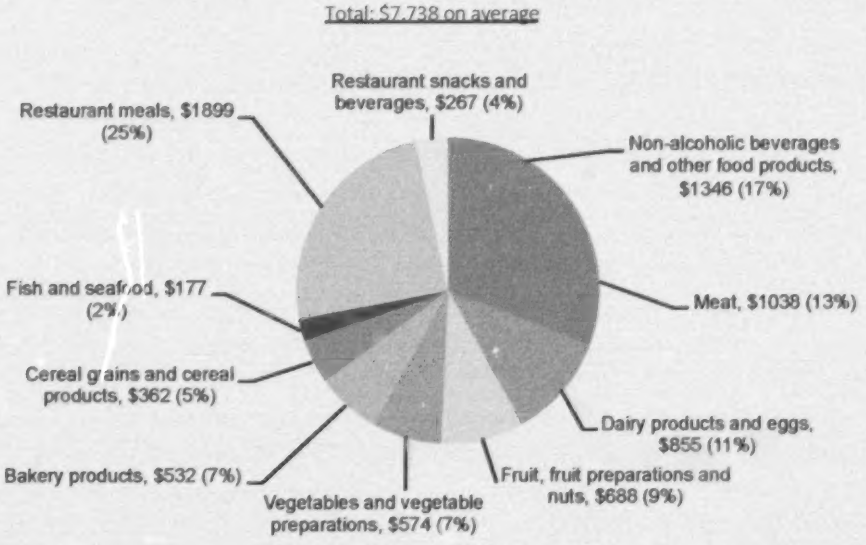
Canadian households allocate their food and beverage expenditures across a broad range of food products

Canadian households spent an average of $7,738 on food and non-alcoholic beverages in 2012. This included both food purchased from stores and meals eaten at restaurants.

Restaurant meals accounted for the largest share, averaging $1,899 per household, or 25% of total average expenditures on food and beverage expenditures. Snacks and beverages from restaurants amounted to an additional $267 (4%) per household.

The largest shares of expenditures for food and beverage products purchased from stores were non-alcoholic beverages and other food products (17%), meat (13%) and dairy products and eggs (11%).

Chart G.3
Average Value and Distribution of Canadian Household Expenditures on Food and Non-Alcoholic Beverages, 2012


Total: $7,738 on average
Restaurant snacks and beverages, $267 (4%)
Restaurant meals, $1899 (25%)
Non-alcoholic beverages and other food products, $1346 (17%)
Fish and seafood, $177 (2%)
Meat, $1038 (13%)
Cereal grains and cereal products, $362 (5%)
Dairy products and eggs, $855 (11%)
Bakery products, $532 (7%)
Fruit, fruit preparations and nuts, $688 (9%)
Vegetables and vegetable preparations, $574 (7%)

Source: Statistics Canada and AAFC Calculations

Expenditures on food alone represented a small proportion of all household spending

Real spending on food and non-alcoholic beverages increased by 2.1%, from $121.3 billion in 2012 to $123.3 billion in 2013.

Real personal spending on food from stores increased from $79.3 billion in 2012 to $80.2 billion in 2013. Real personal spending on food from restaurants increased from $42.0 billion in 2012 to $43.1 billion in 2013.

Since 1981, Canadians have consistently spent about 34.0% of their annual household food expenditures at restaurants, and the other 66.0% at stores.

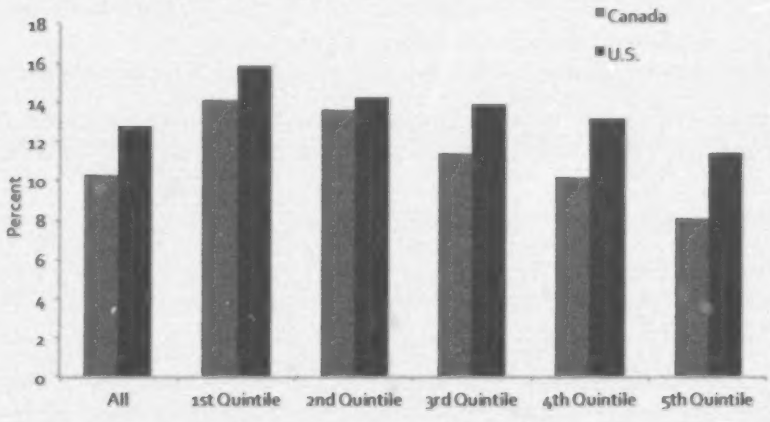
Chart G.4
Real Household Expenditures on Food and Non-alcoholic Beverages, 1981-2013

Source: Statistics Canada special tabulation and AAFC calculations.
Note: Does not include expenditures on alcoholic beverages and tobacco.

Of the total household expenditures allocated to goods and services in 2012, food expenditures accounted for 10.3% in Canada and 12.8% in the U.S.

This, however, varied by income quintile. Food expenditures accounted for 8.1% of all household spending on goods and services; among Canadian households with an income in the top 20.0% (the fifth quintile) and 14.1% (the first quintile) among the lowest income households. Similarly, in the U.S., the proportion of all household spending on goods and services that went to food was 11.4% among those households in the highest income quintile and 15.8% among households in the lowest income quintile.

Chart G.5
Share of Household Expenditures on Total Food by Income Quintile in Canada and the U.S., 2012



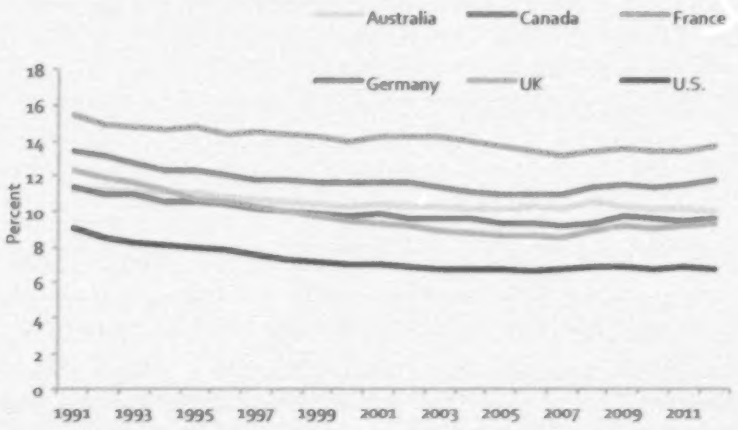
Source: Statistics Canada, U.S. Bureau of Labor Statistics, and AAFC calculations.

Food and non-alcoholic beverages from stores has decreased over time in many OECD countries

Food and non-alcoholic beverages from stores in Canada accounted for 9.5% of total household expenditures.

Among selected OECD countries in 2012, households in France allocated the largest share (13.7%) of their spending food and non-alcoholic beverages from stores, followed by Germany (11.7%), Australia (10.0%) and the U.K. (9.3%). Households in the U.S. spent the smallest share of their spending on food from stores and non-alcoholic beverages from stores (6.8%).

Chart G.6
Household Expenditures on Food and Non-Alcoholic Beverages from Stores in Selected OECD Countries*, 1991-2012



Source: OECD
Note: *Includes food and non-alcoholic beverages from stores only.

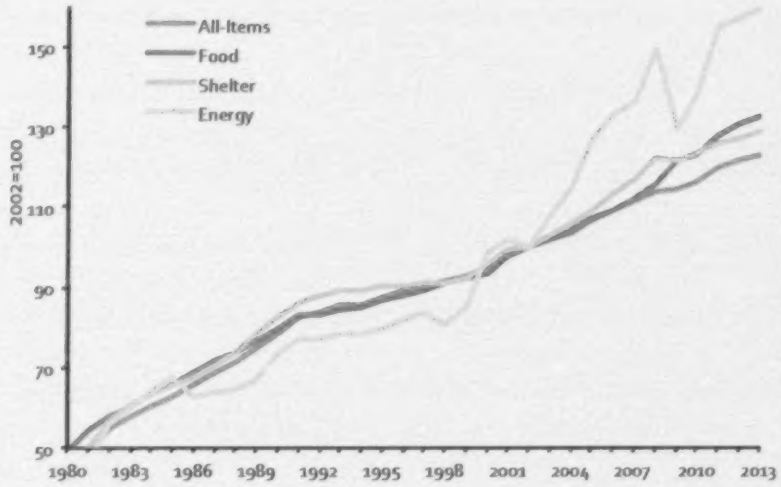
Increase in food expenditures in 2013 is partly due to a slight increase in retail food price inflation in Canada in 2013

The retail price inflation rates for food, shelter and energy increased slightly in 2013. This contributed to increased overall price inflation of 0.9% in 2013, which was lower than the 1.5% increase in 2012.

The retail price inflation rate for food however, was lower than that of other goods and services. In 2013, retail food prices rose by 1.2%, after rising by 2.4% in 2012. Energy prices increased by 1.5% in 2013, after increasing by 1.7% in the previous year. The cost of shelter rose by 1.3% in 2013.

Over the past decade, price inflation of retail foods has generally tracked the All-Items inflation rate and has been far less volatile than that of energy.

Chart G.7
Consumer Price Indices (CPI) for Food, Shelter, Energy and All Items, 1980-2013



Source: Statistics Canada.

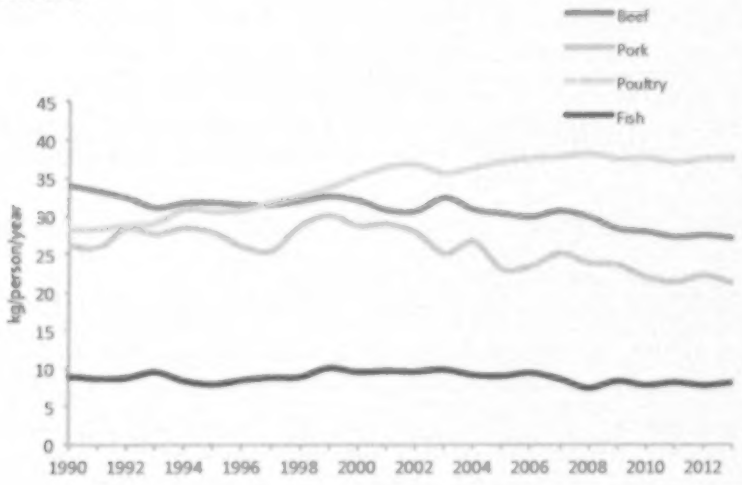
Canadian food consumption patterns continue to evolve. Consumption of beef and porc has declined over time, whereas poultry consumption continues to increase

Food availability is used as a proxy for consumption and is measured as the total weight of all the food made available for human consumption by the food supply chain.

Beef availability continued trending downward and decreased by 1.5%, reaching 27.1 kilograms per person in 2013. Pork availability, has also generally trended downward and decreased by 4.5%, to reach 21.2 kilograms per person in 2013.

The availability of poultry continues to exceed that of beef every year since 1997. Per capita poultry availability was 37.6 kilograms per person in 2013, unchanged from the previous year.

Chart G.8
Estimated Per Capita Consumption of Beef, Pork, Poultry and Fish*, 1990-2013



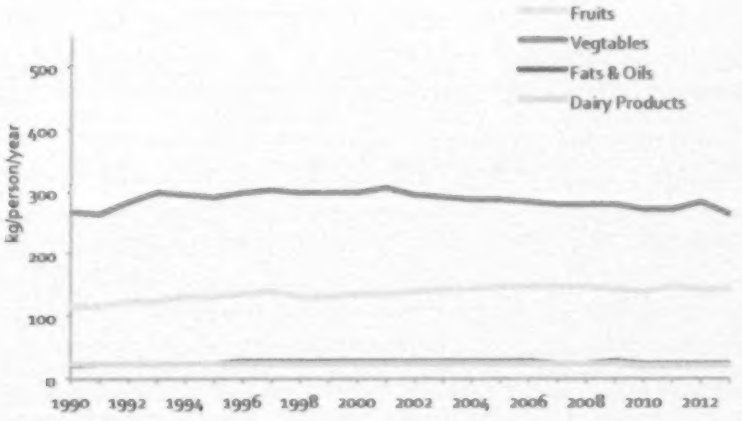
Source: Statistics Canada and AAFC calculations.
Note: *Represents food available for consumption and not actual quantities of food consumed.

In 2013, availability of vegetable products declined while availability of fruit products, fats and oils and dairy products remained relatively stable.

Vegetable product availability declined 7.3% in 2013 reaching 262.6 kilograms per person in 2013. In contrast, fruit product availability rose 0.7% to 143.7 kilograms per person.

Availability of fats and oils increased by 0.2% to 25.8 kilograms per person while that for dairy products decreased by 0.2% to 21.3 kilograms per person.

Chart G.9
Estimated Per Capita Consumption of Dairy Products, Fruits and Vegetables and Fats and Oils*, 1990-2013



Source: Statistics Canada and AAFC calculations.
Note: *Represents food available for consumption and not actual quantities of food consumed.

SECTION H

SECTION H

Government Expenditures and Support to Producers

Introduction:

Government expenditures (federal and provincial) covers an array of activities such as program payments, research and inspection, environment, as well as rural and market development, and varies greatly across provinces. Agricultural policies in Canada and other countries have evolved over time. Changes have been made, not only decreasing the level of support, but also modifying the type of support. While government expenditures have declined over the past decade, they remain historically strong.

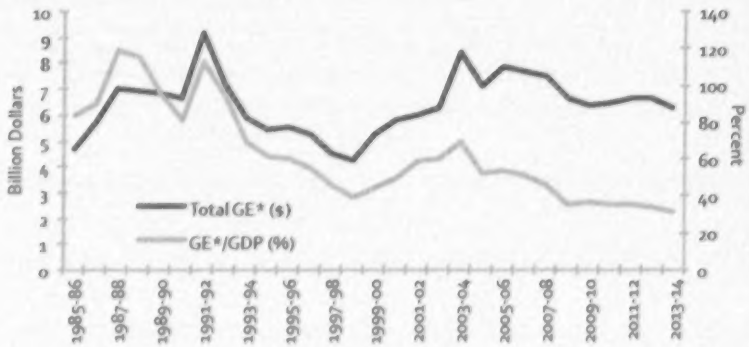
Expressed in dollar terms, government expenditures in support of the agriculture and agri-food sector are expected to decrease slightly to $6.2 billion in 2013-2014 fiscal year. As a share of the agricultural GDP, government expenditures are estimated to be 31.2% in 2013-2014.

Government expenditures in support of the agriculture and agri-food sector have slowly declined over the past decade but are still at historically high levels

Government expenditures in support of the agriculture and agri-food sector are estimated at $6.2 billion in 2013-2014, or 31.2% of agricultural GDP.

Throughout the 1990s, government expenditures (GE) declined, both in dollar terms and as a share of the agricultural GDP. However, both indicators began to increase in 1998-1999, peaking in fiscal year 2003-2004 as a result of programs stemming from the 2003 Bovine Spongiform Encephalopathy (BSE) crisis. Since this time, GE have been declining slightly, while GE as a share of agricultural GDP has declined more rapidly.

Chart H.1
Total Government Expenditures* in Support of the Agriculture and Agri-Food Sector as a Share of Agriculture GDP, Fiscal Years 1985-1986 to 2013-2014

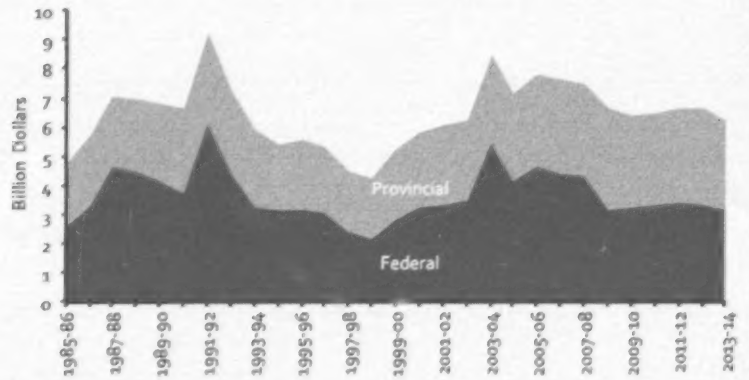


Source: AAFC
Note: Fiscal year 2013-2014 figures are estimates.
*GE - Government Expenditures include Federal & Provincial

The federal government has provided, on average, $3.6 billion per year over the past three decades in support of the agriculture and agri-food sector. The provincial government have provided on average, $2.7 billion per year.

The federal government plans to spend $3.1 billion in 2013-2014, or 50.9% of total GE in the sector compared to 50.7% last year. This slight increase is due to a sharper decrease in provincial spending relative to federal spending. However, the federal share of 50.7% in 2013-2014 is below the average of the last three decades (57.2%).

Chart H.2
Total Government Expenditures (Federal and Provincial) in Support of the Agriculture and Agri-Food Sector, Fiscal Years 1985-1986 to 2013-2014



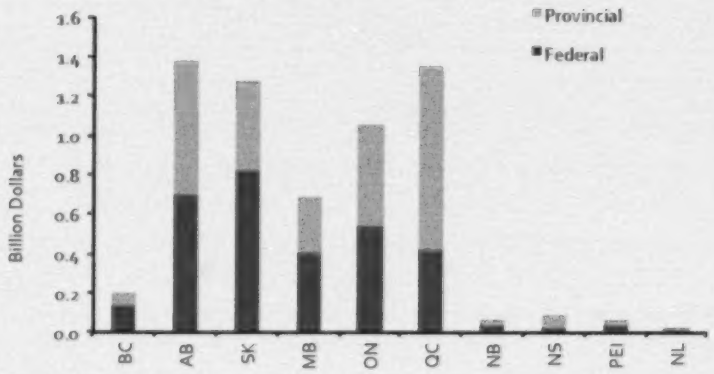
Source: AAFC
Note: Fiscal year 2013-2014 figures are estimates.

Provincial government expenditures in support of the agriculture and agri-food sector vary considerably

In fiscal year 2013-2014, total government expenditures in support of the agriculture and agri-food sector varied from $33.3 million in Newfoundland and Labrador to almost $1.4 billion in Alberta.

With more than $1 billion of expenditures, Québec is the only province where provincial expenditures are higher than federal expenditures. In 2013-2014, 68.7% of government expenditures in Quebec were from the provincial government due to specialized programs addressing regional needs.

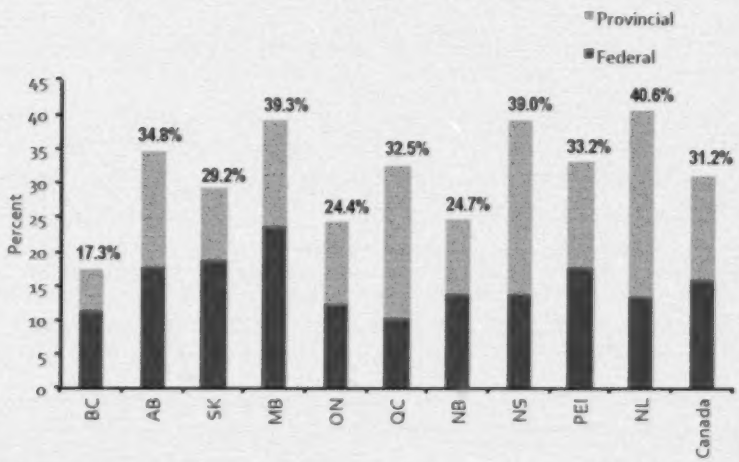
Chart H.3
Total Government Expenditures (Federal and Provincial) in the Agriculture and Agri-Food Sector by Province, Fiscal Year 2013-2014



Source: AAFC
Note: Fiscal year 2013-2014 figures are estimates.

In fiscal year 2013-2014, total government expenditures in support of the agriculture and agri-food sector accounted for 31.2% of the agricultural GDP at the national level but varied across provinces.

Chart H.4
Total Government Expenditures in the Agriculture and Agri-Food Sector as a Share of Agriculture GDP, Canada and by Province, Fiscal Year 2013-2014



Source: AAFC
Note: Fiscal year 2013-2014 figures are estimates.

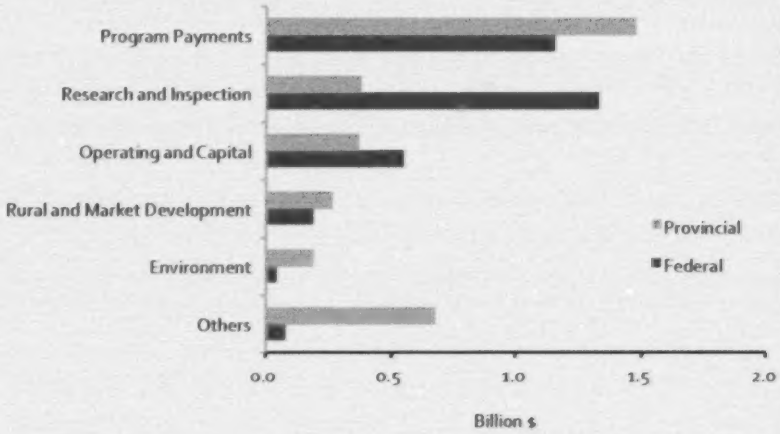
Government expenditures are not evenly distributed among activities

For the 2013-2014 fiscal year, research and inspection are estimated to account for the largest share of total federal government expenditures in support of the agriculture and agri-food sector in Canada.

At the provincial level, program payments are estimated to account for the largest share of total government support, continuing the trend from previous years.

Federal expenditures which can be attributed to business risk management is estimated to account for 34.5% of the total federal government support to the sector in the fiscal year 2013-2014.

Chart H.5
Federal and Provincial Government Expenditures in Support of the Agriculture and Agri-Food Sector by Major Category, fiscal year 2013-2014



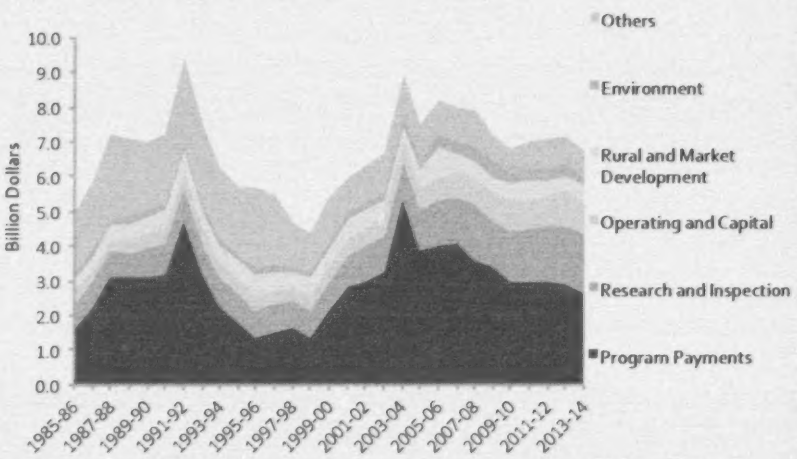
Source: AAFC.
Note: 2013-14 figures are estimates.

Composition of support has changed over time, but program payments continue to be an important component of support to the agriculture and agri-food sector.

However, after 2003-2004 fiscal year there has been a decrease in program payments and other expenditures and an increase in Research and inspection expenditures.

Research and Inspection expenditures accounted for 25.5% of total expenditures in support of the agriculture and agri-food sector in 2013-2014, and increased from 55.1% in 2003-2004 fiscal year.

Chart H.6
Federal and Provincial Government in Support of the Agriculture and Agri-Food Sector by Major Category, 1985-1986 to 2013-2014



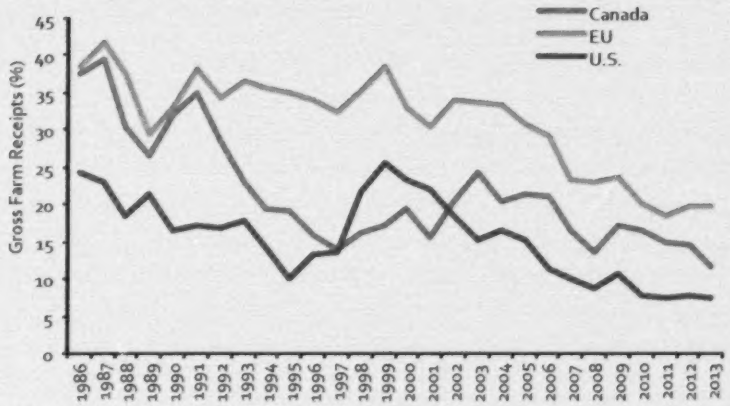
Source: AAFC
Note: Data are estimates from fiscal year 2013-2014

Total support to Canadian producers has declined in recent years, in part due to higher commodity prices

In 2013, the producer support estimate (PSE) for Canada was 11.6% of gross farm receipts (GFR).

This was a decline from 14.5% in 2012, mainly attributable to a decrease in budgetary transfers. However, it has remained above that of the U.S. (7.4%) but below that of E.U. (19.8%).

Chart H.7
Percent of Producer Support Estimates (PSE) to Gross Farm Receipts in Selected Countries, 1986-2013



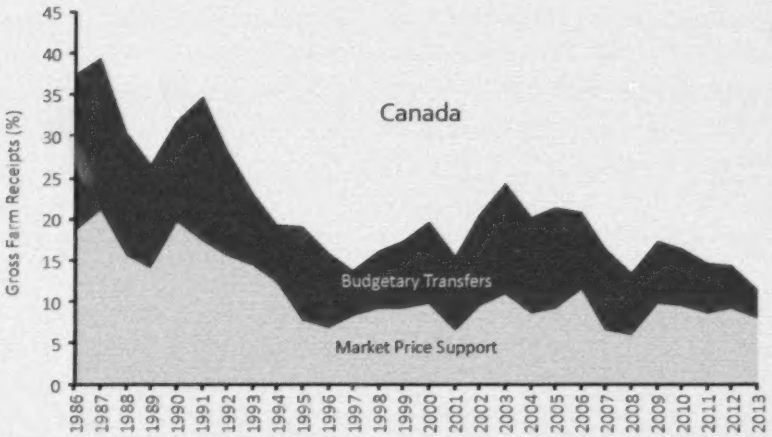
Source: OECD, Trade and Agriculture Directorate, Producer and Consumer Support Estimates, OECD Databas. Note : 2013 Data are preliminary.

In 2013, 69.6% of the total support to producers in Canada was provided through market price support (MPS), compared to an average of 52.1% over the 1986-2013 period.

In Canada, both MPS and budgetary transfers, expressed as a percentage of GFR, decreased over the 1986-2013 period. The share MPS during this period fluctuated between 40.0% and 69.6%.

In Canada, milk production has traditionally received the highest level of support through MPS. Milk's share of the total MPS increased slightly between 2012 and 2013 from 61.8% to 62.5%. However, over the same time period, poultry's share of the total MPS decreased slightly, from 18.5% to 17.9%.

Chart H.8
Composition of Support to Producers in Canada, 1986-2013



Source: OECD, Trade and Agriculture Directorate, Producer and Consumer Support Estimates, OECD Database. Note:2013 data is preliminary.

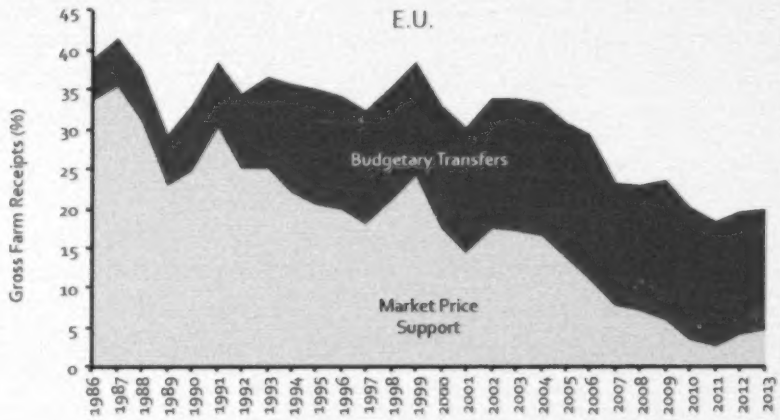
In the E.U. and the U.S., policy reforms coupled with change in commodity prices have led to a significant reduction in Market Price Support (MPS) and slight increases in budgetary transfers

In 2013, 76.8% of total support to agricultural producers in the E.U. was provided through budgetary transfers, compared to an average of 46.8% over the 1986-2013 period.

In the E.U., budgetary transfers, as a share of total support, have increased. In 1986, 86.6% of all support to producers in the E.U. was provided through MPS, compared to just 23.2% in 2013.

The E.U. has changed the way support is provided to agricultural producers through significant reforms to the Common Agricultural Policy (CAP)* that decreased intervention prices while increasing fixed direct payments to producers.

Chart H.9
Composition of Support to Producers in the EU, 1986-2013



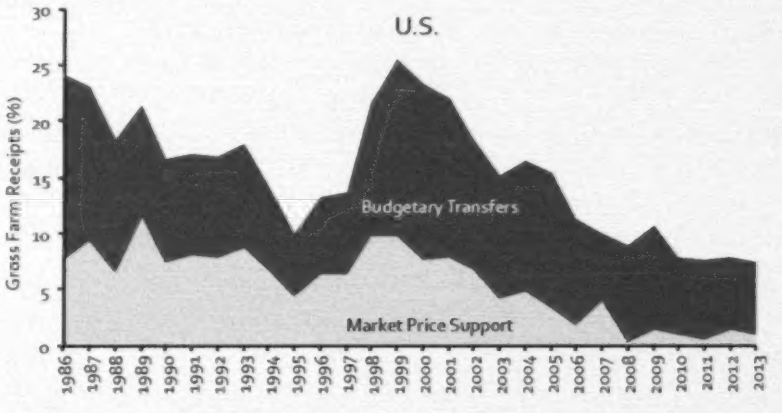
Source: OECD, Trade and Agriculture Directorate, Producer and Consumer Support Estimates, OECD Database. Note: 2013 data are preliminary.

In 2013, 87.6% of the total support to agricultural producers in the U.S. was provided through budgetary transfers, compared to an average of 66.6% over the 1986-2013 period.

In the U.S., both MPS and budgetary transfers, expressed as a percentage of gross farm receipts, were on a declining trend over the 1986-2013 period.

Milk production received the highest level of support through MPS in the U.S. In 2013, milk's share of the total MPS was 61.3%.

Chart H.10
Composition of Support to Producers in the U.S., 1986-2013



Source: OECD, Trade and Agriculture Directorate, Producer and Consumer Support Estimates, OECD Database Note: 2013 data are preliminary.

THE CANADIAN AGRICULTURE AND AGRI-FOOD SYSTEM'S COMPONENTS

Agriculture and Agri-Food Sector
The agriculture and agri-food sector is composed of all industries whose primary role is to produce food and agricultural products. It encompasses both primary agriculture and food, beverage and tobacco processors.

Canadian Agriculture and Agri-Food System
The Canadian agriculture and agri-food system is a value chain of industries focused on producing agricultural and food products. It includes agricultural input and service suppliers, primary agriculture, food, beverage and tobacco processors, food retailers/wholesalers, and foodservice establishments.

Unless otherwise noted, component stages of the agriculture and agri-food system are defined according to the North American Industrial Classification System (NAICS). A detailed listing of included industries for each component stage of the system is provided below.

Input & Service Suppliers
Agricultural input and service suppliers are composed of the following industries as defined by NAICS:

At the 4-digit level
1151 Support Activities for Crop Production
1152 Support Activities for Animal Production
3253 Pesticide, Fertilizer and Other Agricultural Chemical Manufacturing
4171 Farm, Lawn and Garden Machinery and Equipment Wholesaler-Distributors
4183 Agricultural Supplies Wholesaler-Distributors

At the 5-digit level
33311 Agricultural Implement Manufacturing

Primary Agriculture
Primary agriculture is composed of the following industries as defined by NAICS:

At the 3-digit level
111 Crop Production
112 Animal Production

At the 4-digit level
1111 Oilseed and Grain Farming
1112 Vegetable and Melon Farming
1113 Fruit and Tree Nut Farming
1114 Greenhouse, Nursery and Floriculture Production
1119 Other Crop Farming
1121 Cattle Ranching and Farming
1122 Hog and Pig Farming
1123 Poultry and Egg Production
1124 Sheep and Goat Farming
1125 Animal Aquaculture
1129 Other Animal Production

Food, Beverage and Tobacco Processing
Food, beverage and tobacco processing is composed of the following industries as defined by NAICS:

At the 3-digit level
311 Food Manufacturing
312 Beverage and Tobacco Product Manufacturing

At the 4-digit level
3111 Animal Food Manufacturing
3112 Grain and Oilseed Milling
3113 Sugar and Confectionery Product Manufacturing
3114 Fruit and Vegetable Preserving and Specialty Food Manufacturing
3115 Dairy Product Manufacturing
3116 Meat Product Manufacturing
3117 Seafood Product Preparation and Packaging
3118 Bakeries and Tortilla Manufacturing
3119 Other Food Manufacturing
3121 Beverage Manufacturing
3122 Tobacco Manufacturing

Food Retail/Wholesale
Food retail/wholesale is composed of the following industries as defined by NAICS:

At the 3-digit level
411 Farm Product Wholesaler-Distributors
413 Food, Beverage and Tobacco Wholesaler-Distributors
445 Food and Beverage Stores

Foodservice
Foodservice is composed of the following industries as defined by NAICS:

At the 3-digit level
722 Food Services and Drinking Places

At the 4-digit level
Vending Machine Operators

HOUSEHOLD EXPENDITURES ON GOODS AND SERVICES

Shows the expenses incurred for food, shelter, household furnishings and equipment, clothing, transportation, communications health care and services, recreation, education and culture, tobacco products and alcoholic beverages, games of chance, and a miscellaneous group of items.

Personal Expenditure on Consumer Goods and Services
Household spending on new consumer goods and on consumer services, plus any mark-up on used goods. Real personal spending is personal expenditures adjusted for inflation

CLASSIFICATION OF FOOD PURCHASES

Food and Non-Alcoholic Beverages Purchased from Stores
Food purchased from stores includes supermarkets, food specialty stores (butcher shops, fresh produce stores, bakeries, fish markets, delicatessens, health food stores, markets or stands, and direct purchases from producers and frozen food suppliers, outdoor farmers' markets and stands, and all other non-service establishments), convenience stores, and other (any other type of store that sells food items, such as department stores, club-type stores, drug stores, etc.).

Food Away From Home
Includes food purchased from restaurants includes table-service restaurants, fast-food restaurants, cafeterias and other (refreshment stands, snack bars, vending machines, chip wagons, caterers and mobile canteens). They are usually found at supermarkets, theatres, exhibitions, sports events, parks, etc.

Alcoholic Beverages
This includes those purchased from stores and restaurants. Also included are expenditures on supplies and fees for self-made beer, wine or liquor. Purchases of alcoholic beverages may be under-reported.

FARM INCOME DEFINITIONS

Average net operating Income
Average net operating income is income level derived by dividing total net operating income by number of farms.

Capital Cost Allowance
Capital cost allowance refers to the amount deducted for depreciable property for tax purposes.

Debt-to-Asset Ratio
Debt-to-asset ratio at the farm level is total debt divided by total assets.

Debt-to-Equity Ratio
Debt-to-equity ratio at the industry level is total debt divided by total equity.

Direct Payments
Direct payments include the amounts paid under government agricultural programs and agricultural programs funded by the private sector. These include insurance programs funded totally by premiums paid by producers. Only those payments related to current agricultural production and paid directly to individuals involved in agricultural production are included.

Farm Cash Receipts
Include revenues from the sale of agricultural commodities, program payments from government agencies, and payments from private crop and livestock insurance programs. Receipts are recorded in the calendar year (Jan.-Dec.) when the money is paid (cash basis) to farmers.

Farm operating Expenses
Farm operating expenses and represent business costs incurred by farm operators for goods and services used in the production of agricultural commodities. All expense information is on a calendar year basis. If direct rebates are paid to farmers to reduce the cost of particular inputs, then the net expense estimates are used in the preparation of net income, although both gross and net expenses may be displayed. As the objective is to produce provincial estimates of net income, flows from one farm to another are excluded from the estimates. The province can be viewed as one large farm.

Farm Net Worth
Farm net worth is measured as the total assets of the farm evaluated at current market value less total liabilities.

Receipts
Market receipts refers to cash income from the sale of agricultural commodities, but excludes direct program payments to producers.

Cash Income
Net cash income measures farm business cash flow (farm cash receipts minus operating expenses) generated from the production of agricultural goods. Net cash income represents the amount of money available for debt repayment, investment or withdrawal by the owner.

Net Value Added
Net value-added measures agriculture's contribution to the national economy's production of goods and services created in a particular year. It is derived by calculating the total value of agricultural sector production, including program payments, and subtracting the related costs of production (expenses on inputs, business taxes and depreciation). Net value-added is distributed to the various factors of production, including rent to non-operator landlords, interest to lenders, wages and profits.

Net Operating Income
Net operating income is a term to refer to the difference between gross farm revenues and total farm cash expenses.

Profit Margin Ratio
Profit margin ratio at the industry level is calculated as operating profits divided by total operating revenues. Operating profit is the net result of the principal business activities of a firm. It is calculated before taking into account interest expense, investment income, non-recurring losses from the write-down of assets, gains or losses realized on the disposal of assets, and income tax expense. This ratio indicates management's ability to generate earnings from the principal business activities of a firm.

Rate of Return on Long-Term Capital
The rate of return on long-term capital is calculated as operating income (without deducting either taxes or interest paid) divided by long-term capital, where long-term capital is taken to be the sum of shareholders' equity and long-term debt.

Return on Equity
The rate of return on equity at the farm level is calculated as net operating income minus capital cost allowance divided by net worth at cost. In the case of dairy and poultry farms, the allowance on eligible capital property for quota was also deducted.

Return on Equity Ratio
Return on equity ratio at the industry level is calculated as after-tax profit divided by total equity x 100. This ratio measures the level of return to the owners (investors) and it represents their measure of profitability. The earnings figure is the after-tax profit, including a deduction for interest expense (payments to lenders). It is the net profit available to the owners (investors). The ratio indicates how many cents are returned to every dollar invested by the owners.

Quintiles
Quintiles are ranking households in ascending order of total household income and organized into five groups of equal numbers.

Quota Value
The value of a specified quantity of a supply-managed agricultural commodity, such as those in the dairy or poultry industries, which a producer is allowed to supply.

Technology
Technology is broadly defined to include the technical means and know-how required to produce a product or service. It takes the form of equipment, materials, processes, blueprints and knowledge.

FOOD LOSS / WASTE DEFINITIONS

Food losses refer to unintended spills , deaths or spoilage or technical problems that reduce commodity production before it reaches a buyer or consumer.

Food waste refers more to behavioral issues that otherwise reduce food intended for human consumption due to negligence or conscious decisions to discard food. Adapted from *FAO, 2011 and World Resources Institute, 2013*

Food loss and waste
This includes the edible portions of foods produced that are intended for human consumption but that are not consumed.

FOOD RETAIL/WHOLESALE

Chain Stores
Food retailers are divided into chain stores and non-chain stores. Chain stores are defined as operating in four or more locations in Canada (within the same industry group and under the same legal ownership).

ECONOMIC AND STATISTICAL TERMINOLOGY

Advanced Technology
Advanced technology refers to a new technology that performs a new function or improves some function significantly better than commonly used technologies. Examples include biotechnology, nanotechnology, etc.

Capital Stock
Fixed capital is comprised of buildings, engineering structures and machinery and equipment. Total investment in fixed capital is made up of purchases needed to offset depreciation (replacement needs) and purchases to expand the capital stock. When replacement needs exceed investment, the capital stock falls, since the existing stock is not being maintained. When investment exceeds replacement needs, the stock increases.

Chained Dollars
A measure to express real volumes of production or expenditure by removing the distorting effects of price changes over time.

Check-offs
Producer association check-off schemes are common sources of funding for R&D innovation, promotion and development of agriculture commodities. These schemes usually involve an annual assessment of marketing or sales, where the revenue is pooled by the grower organization and a percentage share or fixed amount levy is collected for these purposes.

Concentration Ratio (CR4)
Concentration ratio is a measure of an industry's concentration level and expresses sales of a set number of the top firms in the industry as a percentage of total industry sales. CR4 is the acronym for the concentration ratio of the top four firms in the industry.

Constant Prices
Constant prices refers to a value from which the overall effect of a general price inflation has been removed.

Crop Yield
Crop yield is a measure of the amount of a crop harvested per unit of land area.

Crop Year
A crop year is a twelve-month period used for collecting data on a particular crop — generally corresponding to the natural planting and marketing cycle for that crop. Usually, a crop year begins in a month other than January.

Foreign Direct Investment (FDI)
FDI refers to investment by non-residents in an enterprise where the non-residents own 10 percent or more of the ordinary shares or voting power in incorporated enterprises or the equivalent in unincorporated enterprises.

Gross Domestic Product (GDP)
The GDP for a country is the total unduplicated value of the goods and services produced in that country during a given period.

Labour Productivity
Labour productivity is a measure of an industry's output per hour of labour worked.

Marketing
Marketing in the agricultural sector includes all of the services involved in moving an agricultural product from the farm to the consumer. Numerous interconnected activities are involved, such as growing, harvesting, grading, packing, transporting, storing, processing, distributing, advertising and sales.

Product Innovation
A product innovation is the market introduction of a new or significantly improved good or service with respect to its capabilities, user friendliness, components or sub-systems. Product innovations must be new to the firm.

Process Innovation
A process innovation is the implementation of a new or significantly improved production process, distribution method or support activity for a firm's goods or services. Process innovations must be new to the firm and exclude purely organizational innovations.

Value-Added Production
Value-added production refers to products that have undergone some processing.

GOVERNMENT SUPPORT CATEGORIES

Government Expenditures
Government spending (at all levels) on agriculture and food processing in a year, both direct and indirect, to individuals, agencies or associations.

MAJOR GOVERNMENT EXPENDITURE CATEGORIES

Development, Trade and Environment-Related Program Expenditures
Include administration and capital expenditures incurred by the government to work on regional development, marketing and trade, and environmental activities as well as grants and contributions issued by the government for work on these activities.

Operating and Capital Expenditures
Include government expenditures on general administration and management, and on policy information and statistical services.

Other Expenditures
Include government expenditures on food aid and international assistance, extension, and education as well as social program payments and tax expenditures.

Program Payment Expenditures
Include payments for income support and stabilization programs, ad hoc and cost reduction programs, agri-insurance and financing assistance programs.

Research and Inspection Expenditures
Include administration and capital expenditures incurred by the government to perform research and inspection activities, as well as grants and contributions issued by the government for work on these activities.

Storage and Freight Assistance Expenditures
Program payments for storage and freight.

Total Government Expenditures
Involves expenditures from both Federal and Provincial governments.

GOVERNMENT SUPPORT MEASURES

Budgetary Transfers
Budgetary expenditures from governments providing direct payments to agricultural producers.

Market Price Support (MPS)
Transfers to agricultural producers from policy measures that create a gap between domestic market prices and border prices of a specific agricultural commodity.

Producer Support Estimate (PSE)
A yearly measure of policy support to farm producers. It is the sum of market price support and budgetary payments to producers, expressed as a percentage of the gross farm receipts.

Gross Farm Receipts (GFR)
The value of commodity production plus the direct transfers received by producers in the current year.

Single Commodity Transfers
Transfers to agricultural producers from policy linked to the production of a single commodity, such that the producer must produce the designated commodity in order to receive the transfer.

TRADE CATEGORIES

Agriculture and Agri-Food Exports
Agriculture and agri-food exports include the export of agriculture commodities, food (excluding fish and fish products), non-alcoholic beverages (including bottled water), alcoholic beverages, tobacco products, and floriculture and nursery.

Agriculture and Agri-Food Imports
Agriculture and agri-food imports include the import of agriculture commodities, food (excluding fish and fish products), non-alcoholic beverages (including bottled water), alcoholic beverages, tobacco products and floriculture and nursery.

Intra-Regional Trade
Trade between two regions in a given location. For example trade between Canadian provinces or the European Union member countries.

Primary Agriculture Product Trade
Uses the North American Industrial Classification System coding structure as the basis, defines primary agriculture as codes 111 and 112.

Processed Agri-Food Product Trade
Uses the North American Industrial Classification System coding structure as the basis, and defines processed agri-food products as codes 311 and 3121.

AGRICULTURAL GREENHOUSE GAS EMISSIONS

Environmental Farm Plan (EFP)
EFP is a written assessment of environmental issues or risks on a farm. It contains an action plan detailing the beneficial management practices (BMP) that should be put in place to mitigate or eliminate those risks.

Soil Carbon Sequestration
The process of capture and long-term storage of atmospheric carbon dioxide.

DATA SOURCES AND REFERENCES

SECTION A: FOOD LOSS AND WASTE IN THE AGRI-FOOD SYSTEM

A.1	Adapted from: World Resources Institute, 2013. FULL REPORT NAME: Lipinski, B., C. Hanson, J. Lomax, L. Kitinoja, R. Waite and T. Searchinger, .2013. "Reducing Food Loss and Waste". Working paper, Installment 2 of Creating a Sustainable Food Future. World Resources Institute, Washington DC.
A.2	Adapted from: FAO, 2013. Food Wastage Footprint: Impacts on Natural Resources, Technical Report, Rome, Italy.
A.3-A.4	Adapted from: World Resources Institute, 2013. FULL REPORT NAME: Lipinski, B., C. Hanson, J. Lomax, L. Kitinoja, R. Waite and T. Searchinger, .2013. "Reducing Food Loss and Waste". Working paper, Installment 2 of Creating a Sustainable Food Future. World Resources Institute, Washington DC.
A.5	AAFC calculations using Statistics Canada and USDA data. Statistics Canada, CANSIM Tables 002-0010 and 002-0011 and USDA, Economic Research Service, Loss-Adjusted Food Availability (LAFA) data series.
A.6	AAFC calculations using USDA, Economic Research Service, Loss-Adjusted Food Availability (LAFA) data series.
A.7	AAFC calculations using Statistics Canada and USDA data. Statistics Canada, CANSIM Tables 002-0010 and 002-0011 and USDA, Economic Research Service, Loss-Adjusted Food Availability (LAFA) data series.
A.8-A.9	Adapted from: FAO, 2013. Food Wastage Footprint: Impacts on Natural Resources, Technical Report, Rome, Italy.
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D.8	Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012
D.9	Statistics Canada, Survey of Innovation and Business Strategy, 2009 and 2012
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F.2.2	Canadian Grocer Magazine, February 2014
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G.5 Statistics Canada, Table 203-0022 - Survey of household spending (SHS), household spending, by household income quintile, annual (dollars), United States Bureau of Labour Statistics, Consumer Expenditures in 2012, Annual Consumer Expenditure Survey

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